No. 27.

Field Book

of

Willis L. Jepson
Dept of Botany, University of California

—"—"—

Berkeley, California.

If lost finder please return to W.L. Jepson, University of California, Berkeley and receive reward.

— 1913 —

Berkeley, Mar. 1913

– Eriogonum gossypinum. Perianth 3/4 line long, obscurely puberulent, the outer segs. narrowly oblong or spatulate, the inner linear, acuminate at apex, a little longer than the outer – Fils. at least 6 or 7 to an involucre. — Davy, Kern Co. material.

– Eriogonum thomasii Torr. Perianth saffron-yellow, a shade less than a line long (3/4 to 1 line), the outer segments cordate-ovate at base and with a pair of lateral pockets or inflations near base; inner segments linear-spatulate, a little longer than the outer segs. Involucre deeply 5-lobed, 1/2 line long. — Chuckawalla Springs, Hall 5-8 99. Fils. glab.

– Eriogonum caespitosum Nutt. Bruce, Lake City, Ut, June 1898. Perianth 1 to 1½ lines long, in age twice as long! as seen in no involucre. Fils. hairy, pilose rather, nearly to apex! Ovary glabrous. Per. segs. oblong-obovate, rounded at apex. Per. hairy outside towards base. Purpus 5719 While Uts. is same. I do not believe E. andinum Nutt. is good species.

– Eriogonum thomasii Torr Abrams 3152 Calexico. Perianth ½ line long, dull or whitish green, outer segs ovate, obtuse, cordate at base, a little contracted above middle; inner segs. oblong; fils. glabrous; ovary glabrous

Per. bisphidulous outside at base a little. Per. segs. equal. Hall 5899 Chuchawalla on which was based the first draft of the description has not only such flowers as those of Abrams but also old fls. in which the inner perianth segs. have become enlarged and much saccate on each side near base; the inner segs. have become elongated & are oblong, and surpass the outer segs. The perianth at first dull greenish or yellowish rotate, in age becomes white. Per. ⅓ to ½ line long, in age twice as long. These flowers in age have a remarkable resemblance to the flowers of E. pharmaceoides, plate 11 in Gilgreave's Rep.

– Parry, Dr. C.C. Cf. Parish in Plant World, vol. 12.

- Eriogonum cernuum. Torr. Brandegee Warrens Wall, Colo. D. Perianth glab., 7/8 line long, segs obovate, undulate, truncate or retuse, the inner half as broad. Fils. & ovary glab.

Eriogonum douglasii Benth. Stokes, Reno, 1900. Perianth hairy outside, its segs obovate, the inner in age exceeding the outer, yellow. Fils. lower half pilose. Brandegee, Susanville, fils. pilose only at base, the segments notched or gnawed at apex, a trifle hairy in center on inside, hairy outside, but not strongly in any spms.

- Vortriede, W. Gardener at State Capitol grounds at Sacramento. cf. Chorizanthe vortriedei Brandegee.

- Eriogonum effusum, Nutt. my Fl. diag. based on Bolander 6356, fl. dissections.

- Eriogonum heermannii. Outer per. segs. orbicular, 7/8 to 1 1/3 lines long, inner smaller, of about the same length but very different shape, being broadly oblong, with parallel sides. Fils. & ovary glabrous. — Based on Mohave Desert, Brandegee. Length of perianth best expressed by 1¼ lines I think.

- Eriogonum wrightii. I find no difs. in fls. of the various Cal. forms. All have fils. obscurely short hairy at base. All have inner per. segs. finally longer than outer. This does not appear to be the case in E. junceum but some fls. show it slightly and the rest are too young! I feel sure. The plants (type) are dwarfed or starved I think.

Vacaville, 18 Mar. 1913

- Eschscholtzia californica very backward. Hardly any growth since I was up a month ago.
- The country is in the best of its delicate spring time colors, the Buckeyes just clothed in fresh green coats, a peach tree by the road in full bloom, the hills all green and fair as at no other time of the year.

- Jones, M.E. The naive character of his sly method illustrated by his remarks under Townsendia watsoni Gray in Zoe, 4:263.

- Remy. The coll. of type spm. of Eriogonum brachypodum T. + G. Then is a Remy cited in Gay, Fl. Chil. 5. as author of Chorizanthe spp. I have wondered if they were the same person?

- Eriogonum tripodum Greene. Based* on Indian Valley, Lake Co. D. Cleveland / July 1882. which is an exact match for Hoffis Springs, Lake Co., M.K. Curran, July 1884, type. Perianth very hairy outside 2 to 3 lines long, its segs. oblong. Fils. hairy on lower part. Anal. very broad and short, 1½ lines long, turbinate-bowl shaped. its teeth recurved, short and small.

* That is, the notes of dissections here.

- E. pharocephalum Dougl. Per. very hairy outside, 4 lines l., the stipe-like base almost as long as upper portion. Fils. hairy on lower half. Per. segs. obovate, obtuse. - Based on Yreka, Butler 1428.

-Eriogonum trichotomum Small, Bull. Torr. Club. 25:43 (1898). This is prob. E. umbellatum. If Mrs. Brandegees, Snow Mt, Aug 25, 1892 is this then my ref. is correct. Miss Stokes has labeled Mrs. B's spm. as trichotomum. It has fils. slightly hairy below and on ovary sparingly hairy at apex. Small, l.c. does not compare it with E. umbellatum

-Eriogonum ochrocephalum Notes based on Curtis, Dec. Burnt River, no. 1930. Per. glabrous, 1 to 1 1/4 lines long, segs. elliptic, inner narrower, all obtuse way, fils obscurely puberulous at base. Per. broadly campanulate, not stipitate at all.

-Eriogonum ordii Wats, notes on Davy's Caliente Ck # 1869. Per. densely short pub. 1/2 to 3/4 line long, its segs. oblong. ovary glabrous. Fils. glab. Perianth 1 to 1 1/2 lines long in fruit. Involucre shallowly toothed, 1/3 line to 1/2 line long. Brandegee's split nut. Colo. D. is same except Per. segs. are ovate. Invols. 1- or 2-flowered.

Per. dull white.

— Healdsburg. The country just south of the town and the Russian River in the valley is known as "Poor Man's Flat." Known so from early days.

— Hesperocallis undulata. "Day Lily of the Desert." West Am. Sci. 6:102.

– Eriogonum ovalifolium. In a diagnosis drawn up at the time Miss Hibbard was assisting me in Summer School I wrote "filaments glabrous" In my 4465 Mono Pass I find them densely pubescent at base. The variation in other species in filamentary pubescence has made me think its weight as a character not so very great, altho useful. I had thought to use this as a character to separate E. nivale. The latter now rests entirely so far as I see on its solitary invol. but in material from type loc. I find the 2 or 3 involucres so crowded together that they look

like one involucre. This material is Siberian Pass, Hall 5481. Some of the outer per. segs. are obviously subcordate at base, in other fls. not at all so but almost acute. Perhaps a dif. in age. One "head" – so called solitary invol. – which I have just dissected by separting with great care reveals to one's suprise 4 invols. set or rather crowded in a deeply 3-lobed (monophyllous) bract or primary invol. – the whole looking in the first place like one involucre.

– Eriogonum polyanthum Benth. near Tehachapi Miss Stokes. acc. Stokes. This = State Survey 771 which is var. stellatum var. bahiaeforme.

– Eriogonum nodosum Small. Notes on White Mts., Purpus 6426. Perianth glabrous, 1½ lines long, its segments cut only about ½ way, the outer roundish, notched at apex, the inner similar, about ½ as broad. Perianth broadly campanulate Fils. pilose; ovary glab. (on lower half) Perianth tube somewhat coriaceous. Achene minutely scabrulous.

– Eriogonum molestum Wats. Perianth glabrous, about 1 line long, its segments oblong. Fils glabrous. Ovary scabrulous. Notes on Hall 2624 a, San Jacinto.

– Eriogonum nudum Wats. Perianth glabrous, its outer segs. elliptic, the inner smaller (½ as broad). Per. yellow, ½ line long. Nutl. 7/8 line long. I do not find any stamens. Notes on Indian Wells, Kern Co., Hall & Chandler 7367.

– Eriogonum minutiflorum Notes & Note on Colorado Desert, Orcutt, Apr. 1889. Perianth hispidulose, outside, esp. at base, (minutely & sparingly), 3/4 line long; outer segs. ovate, cordate at base, inner narrowly (narrowly) oblong, longer than the outer and obscurely dilated near base. Achene dark, shining. Outer per. segs. keeled-dilated on each side towards base

or below middle, the color of the saccate keel changing to dull white. ovary & fils. glabrous. Involucre very small, 1/2 line long, broadly turbinate. This seems too much like E. thomasii.

— Eriogonum Kelloggii Gray
Notes on Red Mt. spm by Alice Eastwood, Aug. 4, 1902.
Perianth glabrous, narrowed to a markedly stipe-like base, 4 1/2 lines long, its segments obovate, rounded at apex. Ovary glabrous. Filaments hairy below middle. The stipe is 2/3 line long & filiform! The plant in habit & shape & arrangement of leaves is like E. umbellatum var. microcephalum.

— Eriogonum Kennedyi. Notes (independence.)
Hall 7297. Perianth glab., 1 1/4 lines long., outer segs. broadly oblong, almost subcordate at base in any event abruptly dilated above the very short base. inner segs. narrowly oblong, both sets may sometimes be ovatish. Fils. & ovary glabrous (another fl. shows scabrous ovary.) Involuc. turbinate ~~broadly~~, 1 1/3 lines long, deeply toothed sharply.

Hall 6445 Mt. Pinos has a dif. perianth, the segments being obovate or round obovate but drawn down to a narrow almost claw-like base. Ovary distinctly scabrous. — The dif. in the 2 spms. is due to dif. in age of fls. but not wholly to that; I think there is a slight dif. anyway.

– Eriogonum watsonii T. & G. as rep. by Purpus 6297, Outer per. segs. ovate, cordate at base, the inner rhomboidal-lanceolate very much smaller every way. Per. glabrous, 1 line long Fils + ovary glabrous
Purpus, Chaoc, Nev.

– Eriogonum oxfordii Stokes Type is a single rather poor plant from Inyo Co. It is too near E. insigne Wats. I should say off-hand; the outer sepals are oblong (narrow), cordate at base, invol. rather broad.

– Eriog. heracloides } not represented
" hookeri } in Herb. U. C.
" kingii } at this date
" lemmoni } from Calif.
" flavum
" pharnaceoides

– Eriogonum grande Greene, typ. Fils. only very slightly pub. at base! Less hairy, I think, than the E. nudum of Berkeley Hills.

– Eriogonum nidularium Cov. Perianth glab., 1 line long, outer segs. flabelliform with incurved sides and truncatish apex; better described as follows: quadrate, dilated at the truncate apex, the sides somewhat incurved; inner segs similar but narrower. fils + scabrous ovary glab. Notes from Heller's 8306 White Mts.

– Eriogonum angulosum. Notes on Brewer 851, Corral Hollow. Outer per. segs. broadly ovate, concave, shortly but very distinctly petioled (= clawed), the

inner linear-oblong with a slight dilation just above the claw which is also short but distinct. Inner segs. distinctly longer than the outer.

Davy 1968 San Emigdio has a similar flower. Outer per. segs. obovate, the sides incurved at the middle, the inner linear-oblong, all short-clawed. Segs. equal, but because fl. young? —

R. J. Smith, Log Buellis Hills, outer segs concave inside, distinctly shorter than the linear-oblong inner ones, — all pinkish, the inner a little dilated at base.

— Eriogonum truncatum T. & G. Per. glabrous, 1 1/3 lines long. Outer segs. oval, inner elliptic, Filg. pubescent at very base.

— E. Elegans Greene. Pitt. notes on Mrs. Summer's San Luis Obispo. Per. glab., its segs. spatulate-obovate.

Achene, body of, lenticular, strongly beaked. Per. glabrous. Inv. campanulate, short., perhaps better = cylindric + broad, tapered a little at very base. Norton's original spms. (cotypes) do not differ. The perianth is not pub. nor. gland. Perhaps Greene's spm is dif. There is a Norton plant in hb. U.C. which would seem to be a true cotype, the fls. are slightly gland. & may have been rose red. The leaves are like vimineum. Sheet 6275, right hand plant. The other plants look. E. molestum in their leaves but are very much branched. They correspond to Summer's plant (noted above) and to Norton's cotype in Herb. Brandegee. 6275 has turbinate involucres. — I think on the whole Greene's descrip. best suits the plants first described.

– Eriogonum deflexum. Seems somewhat variable in habit. But is typically widely & divaricately branched. E. brachypodum is not dif. except as to the few gland. hairs. The spms. labeled E. watsoni, E. nivigne, E. hoovheri are like deflexum, remarkably, in leaves, in involucres, in flowers. The involucres in E. watsoni may be a bit narrower but my Colo. Rivers 5254 shows dif. widths of nival. depending on age. E. collinum Stokes is the same thing; dependent on what? I do not know. E. nixfordii is a mere variant of it, just as you get curved internodes in the E. nudum glaziofolium group, or in

E. alatum. If good chars. sep. these things when they have not been mentioned in the books and are hard to see in the plants themselves.

– Eriogonum minutiflorum Mackenzie. A spm. by Orcutt, Colo. Desert in 1889, labeled by John K. Small, is doubtless typical. Per. 3/16 cine long, remotely & sharingly short-hispid at base; inner segs. oblong, a little dilated at base; outer segs. ovate, showing the sides at base a little saccate-dilated after the manner of E. thomasii but not so strongly. Inner segs. longer than outer. – This note duplicates the one on p. 13.

– Eriogonum covillei Small. Bull. Torr. Club. 25:42. is based on Coville's 1656 n.w. of Whitney Mdws. i.e. Siberian Pass. Purpus 1426, "rocky slopes Mt. Whitney" answers to the descrip. & it is a dwarf form of E. umbellatum. I am confident it is these dwarf or unusual states that furnish most of the present-day new species. Consider the Coast Ranges this year! and the way in which moisture is spotted about. What a harvest of new species there ought to be!! It is so, also, in the Sierras The Purpus plant is ½ to

4 inches high. The leaves are in rosettes on short stems as in the dwarf mauvecephalum states of E. umbellatum. Flowers not reduced, attenuate at base but not strongly.

– Eriogonum corymbosum Benth. Attributed to Cal. east side Sierra in Bot. Cal. Coville (Death Val. Bot.) says on east slope Sierra Nev. near Lone Pine. Purpus 1919 is from Cottonwood Ck. Canon which is near Lone Pine and is E. microthecum! Doubtless Coville's plant is the same. In the absence of Cal. spms. from here. I shall conclude so for the present.

– Harford, W.G. On top Mt. Conness 3 Aug. 1890. Cf. Pitt. 5:198.

– Eriogonum ochrocephalum Involucres 6 to 8 – toothed! Invols. somewhat nerved, bladdery in age. Must, I suppose, go in Eucrioganum, altho it looks like the incanum group and has too many teeth for the Eucrioganums. Notes at Church 1930.

– Eriogonum purpusii Brandegee Purpus 5484 type is same as Hall & Chandler's Independence 729. The involucres of the Purpus plant break down the sinuses rather readily but I do not believe this has specific value. The pair plants look exactly alike and have the same filiform peduncles. See p. 15.

– Hickman, J.B. called today. White-gray mustache and hair, genial and pleasant-bull features. Says garrya fremontii fruit is full-grown now near aromas, gluc not ripe until Aug, sometimes ripe in Nov. Pinus sabiniana cones not ripe until Feb. this year. Comely drier even than the famous year of '66-'67. Lived first in that region in 1871; then was away 25 years. Sent plants to Kellogg, Bolander, Greene. "On returning to Monterey & San Benito Cos. found the glorious fields had disappeared under civilization."

– Crede mihi, bene qui latuit, bene vixit. – Ovid.

– Eriogonum adsurgens Stokes Warthan, Alice Eastwood, 11 May 1893. Perianth segs. 2 lines long, oblong or a little narrowed towards base,

fils. slightly puberulous at base. Ovary more or less trigonous, glabrous.

– "Eriogonum ursinum venosum, Stokes." A Mt. Silliman plant so labeled by Miss Stokes, coll. by Mrs. Brandegee, is very slender. It does not look like E. ursinum, has glabrous perianths, and

– Parry, C.C. Biog. sketch & list of other sketches. West Am. Sci. 7:1.

– Redwood. Sequoia sempervirens tree in Col. Freeman's garden, see above vol. 18, p. 56. Measured on 27 Apr. 1913:

Height = 37 feet 2 inches
Circ. = 3 ft. 4 in. at 1 foot.

– Height growth since 1 Dec. '07 = 20 ft. 8½ in.
– Circ. " about " " " 2 ft. 5 in.

c. 2000 ft.

No. 5304. Trifolium tridentatum Lindl. In poor soil, the leaflets short.

No. 5305. Trifolium tridentatum Lindl. In good soil, the leaves linear.

No. 5306 Psoralea physodes (Dougl.) Corolla dull white. Wings oblong, with acute auricles on upper side. Keel petals purplish tipped, abruptly & somewhat truncately drawn down to claw. Banner elliptic. Calyx-teeth hairy inside.

No. 5307. Orthocarpus purpurascens. Benth.

No. 5308. Arbutus menziesii Ph.

No. 5309. Amorpha californica Nutt.

No. 5310. Garrya fremontii Wats. stump sprouts.

Howell Mt. 15 Apr. '13

napa Co. c. 2000 ft.

Stump Sprouting.

— No. 5311. But some shrubs fire-killed not sprouting.

— Garrya elliptic

— Adenostoma fasciculatum.

No. 5311. Arctostaphylos. canescens. whitish glaucous shrub 3 to 4 feet high. La Jota Plateau.

No. 5312. Ceanothus foliosus Parry. Spreading bush 2 or 3 ft. h.

No. 5313. Ceanothus cuneatus. Nutt.

No. 5314. Rhus diversiloba. T. + G.

No. 5315. Festuca californica Vasey. Grass. Det. A. S. H.

No. 5316. Garrya fremonti Wats.

No. 5317. Arctostaphylos stanfordiana Parry. Berries very flat, not symmetrical or round, a little irregularly lobed.

No. 5318. Arctostaphylos manzanita Berries large, glabrous or nearly so, inclined to be pointed a little at apex, wholly glabrous or very obscurely & slightly hairy at apex.

— On sides of Howell Mt, on slope where cut-off trail on Mt. strikes down to Lyons Valley, i.e. on road from Toland House to Sanitarium

No. 5319. Arctostaphylos manzanita. Same as 5318

and growing with it. The berries were depressed and plainly hairy although the hairs are short, few and inconspicuous.

Berkeley to Kramer, Apr 30, '13

Left for the Santa Fe for Kramer at 9 or oclock in the evening. Kramer looked uninviting botanically as seen from the train but when one explores the mesas and washes a great abundance of things are to be found now. I was more than satisfied with the results from this part of the desert.

R. B. Cowan of the Kramer Mercantile Supply Co. was friendly. He keeps the little house, store and runs the blind pig (for Kramer is in a "dry" precinct) and the postoffice

Next day went on to Barstow where I had the usual hearty welcome from Miss Waterman who at once drove me out towards Hinckley. On the way we found a disabled Western Grebe on the desert which when I approached showed fight, advancing and thrusting vigorously at my hands with its long sharp bill. We took him home and put him in a tub of water.

2479 ft. Mohave Desert.

✓No 5320. Oenothera dentata Cav.
Fls. yellow, fading brownish. Red spot below each stamen in throat, 3 cor.
Sandy soil

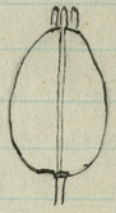
✓No. 5321. Eriogonum mohavense. Det. O.K.-S.S.S.
Sepals wate, very small. Fls. pale yellowish, ½ line long, glabrous. Involucre subcylindric, angled, glab.
Sandy soil. Leaves roundish, undulate, cuneately decurrent on upper part of petiole.

✓No. 5322. Eriogonum gracilliorum
Fls. pink. Outer per. segs. elliptic or broadly oblong, erect with edges incurved white tips abruptly spreading
Per. minutely hispidulose outside
Leaves blistery, elongated, erect, strongly revolute. Per. involucral minutely glandular-hispid Inner per. segs. smaller, all the segs. distinctly crenulate.

Mohave Desert, Kramer

No. 5323. Eriogonum maculatum Heller. Outer per. segs ovate, shingly concave, (the three a little like a 3-lobed capsule in shape), without tips, the acutish apices approximate about the protruded inner linear segments which are white-tipped. Per. greenish, the outer segs. with a large deep red spot in center. The inner segs. are much like concave valves of a 3-lobed capsule. Radical leaves rounded-ovate, plane, not revolute. Per. ± invol. minutely gland-hispidulose.

No. 5322.



No. 5323

No. 5324. ~~Malvastrum Fendleri (Gray)~~ Sphaeralcea ambigua Gray. Cor. bright brick-red. Anthers purple. Ovary densely short-hairy. Stamen column not double so far as determinable in the field. Half the fils. falling after becoming free from the tube. Sandy finely-gravelly soil. Flowers handsome. = S. ambigua Gray, not Fendleri.

No. 5325 Gilia ~~matthewsii~~ = Langloisia Matthewsii (Gray) Greene. Cor. pink, 2 lipped, 5-lobed, the lobes long, equal, splotched with white near base. Three lobes in upper lip, 2 in lower lip, or four in upper lip and the fifth lobe central in lower lip. Upper lip spreading upward, the two lobes of lower lip spreading laterally. Calyx-lobes bristly outside and tipped with a single strong bristle. The upper lobes have a double pink arch ∩ beneath the white splotch, if 4 lobes in upper lip the fourth usually not showing the arch or not so distinctly. = Langloisia matthewsii Greene.

(Dougl. var. fremontii Wats.)

No. 5326. Astragalus lentiginosus. Cor. rose purple. Banner almost 1/3 longer than keels, notched. Wing pets oblong, with marked narrow auricle. Keel pets about as long as wings, with strong but not as narrow auricles.

~~var.~~ paucidentata ~~Jepson~~ Wats.

No. 5327. Stillingia ~~linearifolia Wats.~~ Unisexual fls:- Stamens 2, diverging like a V as exserted from the calyx, which is 2-lipped, the lips approximate by the tips around the filaments. Upper lip 3-toothed, the lower indefinitely (3, 4, 5?)-toothed. Female fls. 2, at base of spike, no calyx, 3-lobed ovary and 4 styles, the fourth shorter, smaller & central. Filaments

very much exserted.

No. 5328 Lycium andersonii Gray. Densely branched shrub 2 ft. h, the numerous branchlets densely covered with jug-like or "flattened jug-like" leaves. Corolla narrowly funnelform. [Remarkable for its pouch-like leaves like little bags of water, pear-shaped globose but a little flattened.]

No. 5329. Lycium cooperi Gray. Corolla lobes revolute and strongly but not closely reflexed! the corolla large. Flowering abundantly. Shrub 2 to 3 ft. h., the branches and branchlets set at right angles, the bark whitish, fissuring lightly longitudinally and revealing a brownish network of the under bark. Shrubs very dense and leafy. See p. 115.

Mohave Desert, Kramer

2479 ft.

v No. 5330. =Eremalche Malvastrum exile Gray. Cor. white, its lobes truncatish erosulate. Calyx lobes ovate, acuminate, anthers blue. equalling cor. Spreading flat on ground

v No. 5331. Eriogonum reniforme Involv. glaucous, hardly looks glandular. Per. segs. equal, glandular, the outer narrowly elliptic, the inner narrowly oblong.* A glabrous leaved mutant also.

v No. 5332. Abronia pogonantha Heimerl Cor. pale or lavender white, deeply 5-lobed, the lobes 2-cleft with divergent lobes. Trailing. Pod flat, winged, obovate notched at apex. Body keeled on one side. See p. 56

v No. 5333. =Streptanthella Thelypodium longirostris Jepson. An odd lemnifer.

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* A central broad nerve green with membranous margin. Stamens broad much exserted

v No. 5334. Hymenoclea salsola T. & G. Comp.

v No. 5335. Astragalus layneae Greene. Diffusely spreading or half-trailing.

v No. 5336. Amsinckia tessellata Gray. Det. McBride

v No. 5337. Eriogonum mohavense.

v No. 5338. Coreopsis (discarded, insect damaged)

v No. 5338a. Chaenactis

v No 5339. Grass. Festuca octoflora hirtella Piper.

v No. 5340. Gilia latiflora Gray. ssp. latiflora ~~G. terniflora var. simulata (Dougl.)~~.

v No. 5341. Chorizanthe thurberi Wats.

v No. 5342. Oenothera primiveris Gray. Pods not angled, roundish altho' tapering.

v No. 5343. Malocothrix glabrata Comp.

Mohave Desert, Kramer

2479 ft.

No. 5344. Oenothera trichocalyx Nutt.
Fls. in a cluster at summit of crown, sometimes with proliferous stems; probably in good years forming the "hanging basket" sort of thing collected last fall.
Fls. pure white, turning pinkish. Sandy soil.
Long slender teretish pod. locally abundant

No. 5345. Lepidium flavum Torr.
Cruciferæ. Pod bed. Fls. yellow.
dry

No. 5346. Peucedanum mohavense C. & R.

No. 5347. Mentzelia albicaulis Dougl.
Cor. yellow

No. 5348. Lupinus odoratus Hel.
Deep green pods. Indigo blue cor. with white splotch.

No. 5349. Eremiastrum bellioides Gray.
Camp.

No. 5350. [illegible]
White fls. in cluster at ground.

No. 5351.
Camp.

No. 5352. Layia glandulosa (Hook.) H. & A.
Rays. white, clear, 3-lobed, 7 or 8 of them.

No. 5353. Oenothera scapoidea T. & G. var. auriantiaca Wats.
Pods. teretish, pedicelled, pubescent.

No. 5353a. Oenothera scapoidea T. & G.
capsules nearly glabrous.

[No. 5517. Chorizanthe
Part of the sheet from Calico Wash. See p. 91. Part from Kramer.
Branches spreading horizontally from the first node, basal leaves green, the upper light slate.]

[No. 5518. Cryptanthe.
Borrog. See p. 39.]

No. 5354. Piptocalyx circumscissus = Cryptantha
Torr.

Mohave Desert, Barstow

2100 ft.

– was met at the station by Miss Waterman with her road team who took me at once to the ranch. Then we drove to Hinkley. On the way we found a disabled Western Grebe on the desert which when I approached showed fight, advancing and thrusting vigorously at my hands its long and slender sharp bills. We took him home and Manson put him in a tub of water. I had the usual hearty welcome from all the ranch people and feel quite at home again.

2 May 1913.

✓ No. 5355. Dalea saunderosii Parish
Shrub 4 ft. high, many stemmed from base or near it, very scraggly. Wood very brittle! Fls. deep indigo!
See p. 44.

✓ No. 5356. Biscutella californica Brew. & Wats.
Crucifer. Fls. white, very wall-fl. like. = Dithyrea californica Harv.

✓ No. 5357. Eschscholtzia
Cor. yellow. Leaves in a close tuft, glaucous.

✓ No. 5358. Gilia schottii (Torr.) Greene = Langloisia
Corolla pale, 5 lobes in 2 lips. 1 (or 2?) lobes in lower lip.

✓ No. 5359. Oenothera gauraeflora J. & G.
Cor. white. Cont. p. 60.
= O. alyssoides H. & A. var. decorticans Jepson.

Mohave Desert, Barstow

2100 ft.

No. 5360. Phacelia crenulata Torr.
Cor. deep blue. Fils blue; authers yellow. Lobes roundish, overlapping a little spreading from the broad tube and a little longer than tube.

No. 5361. ~~Gilia~~ punctata (Hel.)
Cor. lilac, dotted with black dots. "Lilac Sun-bonnets" (Miss Bragg).
See p. 46. = Langloisia punctata Goodding.

No. 5369. Eremiastrum bellioides Gray.
Camp. See next p. 43.

No. 5370. Sphaeralcea rotundifolia Jepson. = Eremelche
Cor. bell-shaped, sidalcea-broadly color, with a bright crimson splotch near base of each.
See p. 42.

No. 5362. Delphinium ~~parryi~~ parishii Gray.
~~D. coelestinum Ryd.~~

No. 5363. Sisymbrium pinnatum Greene. = Descurainia pinnata

No. 5364. Phacelia hispida Gray.
Fls. deep lilac, only grows in shelter of brush. = P. vallismortae Voss.

2 May 1913

Splendid showy thing.

No. 5365. Aster tortifolius Gray.
Woody at base; 10 to 14 in. h.
Perennial, - Rays lilac. Very showy when well-grown and a plant adding greatly to the interest of the desert at this time.

No. 5366. Franseria dumosa Gray.
Camp. Shrub 14 in. h. Coville says this is preferred for forage by horses to all other desert shrubs.

No. 5367. Nama demissum Gray.
Fls. red-purple, making beautiful spots against the gray sand of the desert! Prostrate.
Cont. bottom p. 57.

No. 5368. Gilia eremica Jepson. = Eriastrum
Fls. pale or pale lilac.
= Hugelia eremica Jepson.

No. 5369. See prev. page.

No. 5370. " " "

No. 5371. Mirabilis laevis. (M. calif. of Bot. Cal.)
Woody based, 1 to 1½ ft. h.

No. 5372. Rafinesquia neo-mexicana
Camp. Only grows in shelter of brush. See p. 61.

No. 5373. Mentzelia albicaulis Dougl.

Mohave Desert, Barstow

2100 ft.

[No. 5-35-5 cult. Dalea saundersii: Stamen-tube blended with the lower part of calyx-tube. The petals inserted at the top of this portion, the blended part; by them claws. Banner roundish, folded, auriculate-cordate at base. Lower calyx teeth spreading stiffly at right angles! the others erect!]

No. 5374. (discarded, insect-damaged) Hymenoclea salsola T. & G. Camp. Heads monoecious; ♂ heads with scarious corollas, abortive ovary and much exserted anthers; ♀ heads, — the single flower covered with scarious orbicular bracts cordate and shortly stalked. Styles 2, exserted. — Very abundant low shrub (1 to 3 ft. h.) all over the desert.

Plucheа sericea Arrow-weed. The windbreak at Waterman Ranch looks white and dead from the frost; killed quite to ground but will sprout

The Screwbean Mesquite* is the wisest tree on the desert says Miss Waterman. The rose greens are all in naked winter condition, quite leafless still. The Cottonwood is in full leaf, but the mesquite will not move until it is quite safe. The last three nights have been cold, ice formed each night!

Swallow nest Bend is the name Miss Waterman gives to the camp below Ehrenberg on Ariz. shore in mouth of arroyo with cliffs on either hand. "We went up the arroyo bed in the morning" says Miss Waterman, "and the queer Corona de Cristo looked like the smoke of camp-fires!" That is Dalea spinosa! "The crown of thorns of the Crucifixion. I saw it" says Miss Waterman, "on the Riviera in Italy and it is in Palestine". So if intelligent travelers confuse things, the Mexican peasants may be excused!

* Prosopis pubescens.

[No. 5361. Cont. Filaments adnate to but in relief on tube, the filaments at mouth thus approximate about style and leaving a pin-hole-like entrance between each filament.]

v No. 5375. Mirabilis laevis. See p. 99. Calyx white, its 5 lobes broadly notched with divergent lobes. Stamens 5. Style & stigma one! Ovary superior, 1-celled. Invol. cup narrow, 5-toothed. Woody at base, 12 to 18 in. high. Infrequent but not rare. Wish-bone Bush (Miss Bragg).

v No. 5376. Thaumasma montana. Spreading bush 1 to 1½ ft. h. not infrequent.

[No. 5395. Grayia polygalioides. Thorny shrub 2 to 3 ft. h. See p. 50.]

v No. 5377. Chorizanthe brevicornu. Calyx white, minute, its lobes oblong. Cont. p. 55, 65.

v No. 5378. Phacelia hallii Brand. = P. fremontii Torr.

v No. 5379. Calyptridium monandrum Nutt. [Very abundant about San Bernardino.]

v No. 5380. Psilactis Coulteri Comp

v No. 5381. Encelia eriocephala Gray. 1½ to 2 ft. h. Rays bright yellow.

v No. 5382. Eriogonum inflatum. Annual or perennial!!! Outer per.-segs. broadly lanceolate, the scarious border almost none. Inner per. segs ovate, attenuate at apex, membranous with a green midvein. All segs, yellowish, canescent on back. Det. O.K. acc. S.G.S.

2100 ft.

No. 5383. Phacelia distans Benth. Always in shadow of or about bush. Cor. pale blue, rotately spreading from the short tube, a darker dot in tube opp. each sinus. Scales coherent in front of fils. Fils blue. Style deeply cleft.

No. 5384. Stanleya pinnata Britt. Bush 3 to 4 ft. h. with woody base. Sepals turned backward, in anthesis longer than petals. Petals abruptly spreading from the middle. Stamens long-exserted, the long-stipitate ovary much longer. — Calico Wash, only a few plants seen. Sepals & stamens 1½ long. Petals 3/4 inch long.

No. 5385. Senecio douglasii DC. Flowering stems tufted at

summit of woody stems ½ inch thick. Wash, Calico Mts. Shrub, the woody stems 2 to 3 ft. h., whole bush 2½ to 4 ft. h.

No. 5386. Cryptanthe angustifolia (Torr.) Greene.

No. 5387. Gilia matthewsii Gray. = Langloisia matthewsii Greene.

No. 5388. Chorizanthe rigida Torr. Same as 5409. See also p. 57.

No. 5389. Chaenactis carphoclinia Gray. Comp. discarded too badly insect-damaged. RB. 4/14/55

No. 5390. Mentzelia albicaulis Dougl. Cor. yellow, fading white. No! = M. albicaulis Dougl.

No. 5391. Eriogonum nidularium

No. 5392. Linanthus dichotomus Gilia dichotoma (Benth.) Fls. opening about 5 o'clock.

No. 5393. Cryptanthe barbigera Greene, = C. nevadensis Nels. & Kan. Var. inops (K. Bdg.).

Mohave Desert, Barstow

2100 ft

v. No. 5394. Eriogonum pusillum T.&G.
Dif. from 5331 which has broad round reniform leaves. Involv. glandular. hispidulose markedly! Per. similarly but very minutely glandular. Leaves elliptic to roundish but more or less tapering at base into the petiole. Per. syellowish, the segs. with a reddish centre. - Calico Mts. [Perianth yellow, streaked with red, outer segs. narrow-obovate, obtusish, inner similar but narrower (oblanceolate) - This note in brackets from dried spm.]

v No. 5395. Grayia polygalioides. = G. spinosa
Calico Mts. Fruits deep magenta.

~~Streptanthus inflatus Greene~~

v No. 5396. Caulanthus inflatus Watr. Ben. Heemis of Coolgardie, says: "The Squaw Cabbage makes better greens than spinach". It is very delicate"

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v No. 5397. ~~Pipto calyx~~ = Cryptantha circumscissus Torr. = ~~greeneocharis~~ circumscissa Rydb.

v No 5398. Lepidium flavum Torr.
Prostrate in dry pool beds.

v No. 5399. Layia glandulosa (Hook) H. & A.
Calico Mts. See p. 62.

v No. 5400. Grass. ~~Poa hansoni Scribn~~ Poa scabrella (Thurb.) Benth. ex Vasey
Calico Mts.

v No. 5401. Aster tortifolius Gray.
Desert-Daisy.

v No. 5402. ~~Tilia~~ Linanthus parryae Gray.
Cor. beautiful bluish lilac, the plants very small and the display of flowers on a single plant very wonderful, coloring wide flats in the Calico wash. Anthers yellow. Crests at throat sub-reniform, as if low-inflated or in relief on throat, dark purple. Stamens inserted at summit of very short tube style branches 3. Calyx-lobes scarious margined broadly, twice length of tube. See 5402a = p. 64.

2100 ft.

No. 5403. Allium fimbriatum var. mohavense Gepson.
Ovary ~~3~~ with 3 curving crests which are thin. Sepals elliptical, white or with reddish midvein on back.

No. 5404. Lupinus odoratus Hel.
Same as 5348 Calico Mts.
giving a purple-dotted stain to paper.

No. 5405. Orthocarpus ornatus Heller.
Deep yellow tips to sace.
Calico Mts.

No. 5406. Oenothera trichocalyx Nutt.
Cor. pure white, very large, Pods long, slender, curving downward! Flowers in a tuft at summit of caudex-stem, on proliferous stems later, very fragrant with a rich full apricot flavor that filled at night the Calico Wash. We drove over the flats, filled with the white blossoms

for a half-mile.

No. 5407. Cryptantha barbigera Greene.
Calico Mts. var. inops K. Bdg.
= C. nevadensis Nels. & Ken.

No. 5408. ~~Gilia~~ Linanthus demissus demissa Gray.
Cor. white with pinkish markings its lobes quadratish-oblong, 2/3 length of tube or rather throat, the proper tube almost obsolete but recognizable as a tube, the stamens set on its summit: Anthers yellow. Stigmas 3. Sepals almost distinct with white-scarious margins.
Calico Wash.

No. 5409. Chorizanthe rigida T. & G.
Calico Wash. See p. 65, Same as 5388 also.
Leaves roundish but longer than broad, rounded or obtuse at apex, abruptly but cuneately passing into petiole. Upper leaves broadly ovate to lanceolate spine-tipped.

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2100 ft.

No. 5410. Glyptopleura setulosa

Bigules clear white or yellow tinted. Leaves margined with a whitish margin, Bracts, lanceolate, the outer dilated abruptly at tip into green spot margined with white bristles, the inner bracts without tips, merely acute.

No. 5431. See p 66

Pappus - scales 5 to 8, broad, short, white.

Camp. Calico Wash.

No. 5411. Ephedra

No. 5412. Eriogonum ~~trichopodum~~ trichopes

Per. greenish, its segments ovate, acute, all alike, scarious with a green midvein. Its leaves crinkly or half-blistery.

Calico mts.

Distichlis spicata. Mr. Manson says: - Cattle & horses feed on it and it keeps them alive but they do not fatten on it. It has a bloating effect and their bellies became distended as if they were going to give birth to a calf or colt.

The Zaca-tone, no. 5516, * is a fine feed. The leaves are very harsh & hard but cattle & horses feed on it & fatten up. It grows in the best soil there is. See p. 88.

Eharizanthe brevicorne, no. 5377 Per. white, its lobes oblong, rounded at apex. Involucre with one fl., its per. tube long and slender, the lobes barely exserted. See p. 47

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* Sporobolus airoides
See F.B. 33:129.

-Abronia pogonanta no. 5332. Cont. from p. 36. Per. pink, its limb deeply cleft into 5 unequal segments each divergently 2-lobed. Stamens 5, unequally inserted high on tube. Style + stigma one, reaching to middle of tube. Ovary developing into a 1-, 2-, or 3-winged fruit, the wings unequal on a fruit (when more than one!).

No. 5413. Salazaria mexicana Torr. 15 in. h. dense thorny many-stemmed bush, the flowering manchets at top of the simple stems become next year spiny, dead + hard, and the new flowering manchets are put out mostly below

white stem. Upper lip shortly galeate, pubescent, the short lateral lobes approximate to it with recurved tips. Middle lobe of lower lip appearing to be the whole lower lip, spreading, with strong palate closing throat, flue. Lateral lobes of lower lip white. Stamens 4.

-Chorizanthe rigida, no. 5388. Low simple-stemmed dwarf 1 or 2 in. high. Involucre with 3 unequal spines. Perianth tubular, a little inflated on summit, with 6 short oblong lobes. Stamens probably 9. The hairy white fl. very minute. Gravelly sandy slopes.

-Nama demissum Gray. cont. No. 5367 Cor. purple tubular, the limb shortly 5-lobed, the lobes broad + short very obtuse. Sepals

subulate, pubescent, nearly distinct. Stamens 5, unequal unequally inserted. Ovary a little hairy. Plants flat on ground, making purple spots.

No. 5414. Gilia eremica Jepson. Cor. tubular, its oblong lobes rotately spreading. Stamens well exserted from tube. Lobes shorter than tube. Calyx embedded in a woolly coat, its free spiny teeth projecting. Cor. lavender. Cor. lobes bilabiately arranged, two lobes spreading right & left in lower lip, three lobes in upper lip, rarely 4/1. = Hugelia eremica Jepson.

No. 5415. Menodora spinescens Gray. Cor. white, its lobes broad, spreading, cordately auricled so that 2 lobes stand inside,

2 outside, and one with edge in and the other out. Stamens 2, inserted in tube. Style one. Corolla tubular with spreading limb. Stems numerous forming a clump 15 to 24 inches high and covering a space of a square foot., the old dead stems amongst the live ones. See p. 62 cont.

— Yucca arborescens. Colics Wash. Short-leaved species. I am sitting on the ground beneath a tree 24 ft. h. and 6 ft. 6 in. circ. at 4 ft. It casts a rather dense shade, very little of the suns rays get through, on account of the numerous arms rather than the foliage. It makes a better and more grateful shade than Pinus sabiniana. Sitting here on the ground studying flower parts under a lens is a pleasant occupation. When one's eyes tire there are the desert ranges stretching out on every hand another

and a soft breeze blows from the west.

No. 5416. Delphinium parishii Gray. Stem simple or branching from near base. Both sets of petals notched and the lower the more hairy on upper surface. Nothing peculiar is noticeable about flowers.
Calico Wash.

No. 5417. Oenothera scapoidea T. & G. Pod pedicelled. Corolla white. Petals broader than long, truncatish at base and short-clawed, longer than the calyx-tube, rarely shorter. Stigma greenish.

Oenothera gauraeflora, No. 5359 cont. Pods crowded on stem, reflexed partly. Petals round-ovate, shortly clawed, shorter than the calyx-tube. The petal

is shortly drawn down into the claw.
short

No. 5418. Oenothera brevipes Gray. Petals golden yellow, somewhat quadratish, truncatish or retuse, sessile, 2 or 3 times length of calyx-tube; pods short-pedicelled.

[No. 5372 cont. Pappus plumose on lower half or sparingly upwards. Involucral scales margined with white! Ligules white, a little pinkish on back.] The white margin of the involucral scales is almost wholly lost in drying! The color character of the

No. 5419 Opuntia basilaris Cactus. Petals rose-color, fl. very freely from ovate slabs. See no. 4842, taken last year, spms. of the slabs.

2100 ft.

✓ No. 5420. Oenothera dentata Cav.
Flowering very freely, its slender stems whitish, almost masked by the abundant flowers & by the background of gray sand. Roots thickened as storage reservoirs altho only annual.

- Menodora spinescens, cont. no. 5415,
cont. Stems straightish, branching mostly at top and at right angles with downwardly curving points, so as to give a grappling-hook-like effect.

✓ No. 5421. Eriogonum baileyi S. Wats. var. brachyanthum
Per. segments oblong, or dilated upward, obtuse, yellowish with a marked brown midvein.

- Layia cont. no 5349.
Pappus bristles 10, each with a tuft of supplementary bristles at base and all the bristles

involved in a woolly mesh at base!

✓ No. 5422.
Pappus bristles 5, plumose towards tip, naked below, i.e. on lower half, with a few small supplementary bristles at base. Invol. bracts obtuse, the lower ones pink-tipped. Receptacle with persistent bristles! all the invol. bracts may have pink tips, or none of them. - Rocky slope near Calico Wash.

✓ No. 5423. Chaenactis
Comp. Achenes with 4 spreading paleae, and with several short roundish ones at base, the roundish ones erosulate.

✓ No. 5424. Nama depressum Lemmon.
Cor. very small, white, tubular, 2-lipped, the 5 lobes similar, roundish, crenulate, the middle lobe of lower lip a little larger than the other lobes, and with

2 dots on its palate. Stamens 5, unequal, inserted on tube. Styles 2, distinct. Ovules 10 to 19. Capsule loculicidal, splitting through the placental axis. Sepals 5, linear, almost distinct. [Corollas drying up because past anthesis and possibly not 2-lipped.]

No. 5425. Malacothrix glabrata Cichoriaceous.

No. 5426. ~~Gilia~~ Linanthus demissus demissa Gray. Cor. white with yellow throat, broadly campanulate. Stamens inserted almost at base. Cor. lobes broad & short. Calyx lobes lanceolate, conspicuously margined with white. [No. 5402 a. See p. 51. White flo. in cluster at ground. Coll. at Kramer.] = ~~Gilia~~ Linanthus parryae Gray.

No. 5426 a. Greenocharis = Cryptantha circumscissa Rydb.

No. 5427. Piptocalyx = Cryptantha circumscissus Torr.

No. 5428. Cryptanthe micrantha ~~= Eremocarya micrantha greene.~~ Itn.

No. 5429. Astragalus didymocarpus var. dispermus Gray.

– Chorizanthe brevicornu no. 5377 cont. Plant yellow, Calyx white, barely exserted from invol., tubular, with 6 spreading oblong truncatish & erosulate at apex lobes. Stamens 3. Styles 3, distinct. Ovary 3-angled. All the flower parts glabrous. Plant very fragile and breaking up readily even when green, the invols. thus dispersed by attaching their hooks to objects. Styles nearly as long as ovary. See p. 47.

– Chorizanthe rigida no. 5409 cont. Dwarf of the Waterman Ranch hills. Stamens 9. Per. tubular, the lobes short, acute, hairy outside. Ovary

Mohave Desert, Barstow 2100 ft.

glabrous, with 3 short styles.

No. 5430. Stipa speciosa J. & R.
Grass. Excellent bunch grass
feed on the desert

No. 5431. Eriophyllum wallacei Gray.
Comp. see p. 54. cont.
Pappus-scales clear white against the black achenes.

No. 5432. Hymenoclea salsola, T. & G.
Comp.

No. 5433. Lycium pallidum Miers
? L. cooperi? No! = L. pallidum

No. 5434. Lepidium fremontii Wats.
Woody based bush 12 to 18 in.
high with numerous stems.

- Bee-Plants. We had mesquite honey on the table today; Farris Barnes says: "Screwbean mesquite honey is more abundant than Straightbean mesquite because the flowering lasts longer, [say two months while the other lasts two weeks?]. Honey made from white or blue flowers is clear and white; honey made from yellow or dark yellow flowers is dark. The best honey comes from the White Sage on the coast; it is clearest-whitest. Honey comes from the Greasewood (Larrea mexicana) also but is a poor honey, being rather strong. The plant being so "tremendously" abundant there would be much honey if this species but for the short-flowering season. Mesquite is yellow flowered, yes, but not dark yellow!"

- Clemella obtusifolia. Just beginning to come into flower. Miss Waterman calls it "Dove-grass".

Mohave Desert, Barstow

Woods of the Desert.

— Mr. Manson, Foreman on the Waterman Ranch, Shake of the horses being turned out into the "woods". Professor Wilder, suprised, wanted to know where the woods were! The Sagebrush Problem said Manson. —— It is easy to the desert dweller that desert things take on their true values. When one knows the desert, at what cost a plant lives and grows, their plant life rises to respectful dimensions in your mind which vegetation in a favored land has no chance of holding a place in your esteem. The Sagebrush becomes "woods"; why not?; it hides cattle in it and even a standing man. The Mesquit of Screwbean is a forest tree and respected for it is magnified by its manifold uses. Even the "Sagebrush" here on the ranch is valuable. It is browse. It makes a cover to hold drifting

sand, for every alfalfa field must be backed up by something of the sort in order not to be covered by a drifting sandbed. All these desert things grow in your mind's eye as you live amongst them and they take on a proportion in relation to the desert itself and so the sagebrush becomes "woods" and the mesquite grove a forest.

— Chilopsis saligna. This occurs at Doggett, acc. Parris Harris.

Audibertia incana (Bth.) No. 5435, Lab. notes: Upper lip cor. sharply notched; lower lip of three equal lobes. Two lower stamens fertile, exserted, 2 upper short and sterile. Parts all deep blue except the yellow anthers. Corolla tube short — white — hairy inside. Fils. with a short connective at summit, shown by a somewhat kneed joint or by a tooth. Shrub rather showy as marked in the desert; its flowers small but deep blue against the gray foliage. — See p. 71.

- On Tuesday there was an election on the desert, the "wets" against the "drys". One would think it were dry enough on the desert already but you have to come to some place like this to learn the twists of Progressive legislation. It was a Supervisor's district election. The wets won 2 to 1, but precincts which voted wet must stay dry if dry already. The drys can force another election any time. But if they had won, the wets could not have had another election under two years!! Quite wonderful, isn't it? With the drys its a case of heads I win. The victory was celebrated in Barstow Tuesday night by a procession of men wearing rain-

coats and holding up umbrellas! Only men of the desert where it never or rarely rains would have thought of that!!

Barstow to Goffs.

- Dalea spinosa. Saw this from train window somewhere about Cadiz.

No. 5435. Salvia ~~carnosa Dougl.~~ Dorrii ssp. argentea (Benth.) Audibertia incana New York Mts. See p. 69. Dupl. p. 116.

Labiate. Upper cor. lip of 2 deeply parted ovate lobes. Lateral lobes of lower lip similar, the middle lobe broader than long, erosulate. Cor. blue. Stamens 2; anthers yellow. Filaments blue, jointed well up, a sharp process or vestige of connective at joint. Fl. parts glabrous except cor.-tube inside. Upper lip calyx very shortly 3-lobed, the lower lip deeply divided between its 2 lobes. Calyx magenta-brown

Mohave Desert. New York Mts. c. 4000 ft. Barnard.

Low shrub, 13 to 18 in. h., many-stemmed, forming broad clumps.

No. 5436. Gilia = Phlox stansburyi Hel.
Cor. salverform, pink-red. Stamens 5 in tube, 3 inserted high near mouth, 2 inserted a little lower.
See p. 116 for further account.

No. 5437. Erigeron
Rays white with a slight flush of pink; counts: 13, 13, 13.

No. 5438. Berberis fremontii Torr. many stems in clump.
Bush 9 to 11 ft. h., Stems 6 in. diam. at 4 in. above ground!!

No. 5439. Purshia glandulosa Curran.
Petals white, oborate drawn down to a round-linear claw. Stamens 19 to 25. Calyx-lobes recurving, roundish. Calyx-tube not glandular, minutely strigose.
Shrub with shreddy bark & twisted stems 1 to 3 in. diam.

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Haplopappus linearifolius var. (Stenotus) interior (Gov.)

No. 5440. Comp. shrub 1/2 to 2 1/2 ft. h. Rays yellow, about 9.

No. 5441. Linanthus aurea (Nutt.) Greene
Dwarf, with filiform stems. Cor. yellow, funnelform with spreading limb of round-ovate lobes. Stamens short-inserted in sinuses in throat.
= Linanthus aureus Greene.

No. 5442. Prunus fasciculata Gray
♂ + ♀ bushes. 5-6 ft. h. divaricately branched.
♂ fls. very numerous, thickly crowded on limbs far back of this year's growth. ♀ fls., as set, few.
Bark gray, smooth.

No. 5443. Yucca brevifolia Engelm.
Leaf edge not fibrous. Pers. segs. thick, much thickened towards apex (3 lines thick). Filaments globose-thickened at apex, the 2-celled anthers with the cells

Barnwell — c. 4000 ft. — Mohave Desert

New York Mts.

a little separated on the connective. Stigmas 3, surrounding a pin-hole orifice leading down to ovary, Stigmas each obscurely 2-lobed. 1 -

Engelm. & Bigel.

√No. 5444. Echinocereus ~~cereus~~ mohavensis

Cactus barrel type with 8 or 9 ribs. Spines; a central one from a cluster of 5 or 6. spreading

Pets. deep blood red, Stigmas 8, 10, 11, 10, green!

Stamens crowded into center around style. Plant body 4 to 6 inches high.

- √Rhus trilobata ! Nutt.

√No. 5445. Juniperus osteosperma

Bark grayish, fissured, shreddy. Trunk 1/2 to 2 ft. diam. Shrubs

6 to 10 ft. h.

- Pinus monophylla. Stand cut 75% in foothills, mainly. Trunks 1 ft. diam.

- √Salazaria mexicana. Dense clumps 4 ft. h. + 10 ft. broad. Very slender spiny but spines not hard.

√No. 5446. Mirabilis Froebelii Greene.

Nyctaginaceae. Stamens 5. Style coiled. 6 fls. in involucre which is large. Calyx rose-color, about 1½ in. long. (Flaring great glorious bunches like a wash-tub below ledge.)

- Lycium andersonii, very flaxiferous.

√No. 5447. Calochortus kennedyi √ Porter.

Per. deep saffron yellow, a purple circular spot at base, a circular densely short-hairy cushiony gland in center of petal. Spot and upper portion of spot with hairs (glandular). Anthers purple. Sepals margined with white. Umbels mostly right down on ground.

√No. 5448. Lycium cooperi Gray.

Mohave Desert, New York Mts.

Barnwell. c. 4000 ft

– Providence Mts. are about 25 miles from Barnwell acc. informant at Barnwell. It is about 18 miles to Government Holes and 7 miles beyond. Kelso on the Salt Lake Rail Road is the best way to reach them.

✓ No. 5449. Phacelia fremontii Torr.

✓ No. 5450. Castilleia

Bright red.

Rocky hills.

✓ No. 5451. Opuntia erinacea var. ursina Weber.

Cactus. Often gray and as if woolly, so thick are the spines.

✓ No. 5452. Quercus turbinella Greene turbinella

Bush 6 ft. h.

✓ No. 5453. = Senecio multilobatus T. & G.

Only two plants seen.

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✓ No. 5454. Eriogonum ? deflexum var. deflexum ~~collinum~~ Stokes

Rocky hills

✓ No. 5455 Erigeron pumilus Nutt. sap. concinnoides Cronq.

✓ No. 5456. Plantago ? xerodea Morris

✓ No. 5457. Pectocarya setosa Gray.

Corolla white, small, with small faintly yellowish crown in throat. Nutlets 2 with broad white membranous border or wing, both the body & wing with hooked bristles, the calyx lobes with straight bristles.

✓ No. 5458. Linum lewisii Pursh.

Dry gravelly soil. Cor. pale blue. Stamens 5. Styles 5.

✓ No. 5459. Bromus arenarius Labill.

Grass. Drooping spikelets. As thrown into the sheets the drooping spikelets character is mainly lost.

Mohave Desert, New York Mts.
Barnwell c. 4000 ft.

No. 5460. Oenothera caespitosa Nutt.
Cor. white, trifle over 1 inch.
Pods warty at angles.

No. 5461. Hosachia wrightii (Greene) var. multicaulis Ottley. = Lotus argyraeus var. multicaulis
Cor. lemon yellow, ochre on outside, fading more or less reddish-brown. Perennial.

[No. 5492. Pentstemon centranthifolius
Cor. scarlet, its lobes equal, closely turned back in sets of 2+3.] See p. 85.

No. 5462. ~~Carduus~~ Cirsium californicum
Heads whitish. Stem simple bi- or tri-cephalous on moderately long peduncles.

No. 5463. Gilia virgata var. pygmaea Jepson.
Cor. very pale lilac. Stamens exserted from throat a little, inserted a little way down.

- Chilopsis saligna, in stream bed northerly from Barnwell. "They" are now leafless and both at a distance and near at hand look exactly like scraggly gray willows. The bark is smooth & gray except in the old trunks at base where is dark & roughish. The shrubs are 10 ft. h.

- Phlox stansburyi Hel., no. 5490. See p. 85
The similitude of this and a Garden Pink is very remarkable or of the single large flowering native pinks. The shape & set of the flower, the inflorescence, the foliage - all conspire to say in loudest terms that it is a pink - one cannot get away from this feeling, altho one knows all the time it is a Phlox. It would seem as if

Barnwell c. 4000 ft.

there must be some reason for such analogies and that they cannot be mere coincidences. Doubtless the causes are buried in the remote past and locked up with conditions long since past and at which we can only guess. Perhaps there were sets of conditions which succeeded each other, making bilabiate flowers on a large scale, papilionaceous flowers, composite flowers, pink-type flowers and so on, and that a few or many of each type persisted. Proliferous growth such as

occurs in Composite no. 5474

or in Oenothera no

or in Gilia , is

an example of analogy easily

explained by a common set of conditions.

✓ No. 5464. Erigeron ~~concinnus var. eremicus Jepson n. var.~~
E. pumilus Nutt. ssp. concinnoides Crong.

✓ No. 5465. Hoffmannseggia densiflora Bth.
Leguminous. [Prostrate perennial]

✓ No. 5466. Hilaria rigida (Thurb.) Benth.
[det. Beecher Crampton, Jan. 1973]
Grass. Pleuraphis rigida Thurb.

✓ No. 5467. Menodora spinescens Gray.
Corolla 3 to 3½ lines long. Stamens 2. Style one, entire. Cor. lobes roundish. Shrub 2 ft. h.
See p. 86.

✓ No. 5468.
Grass Bromus rubens L.

✓ No 5469.
Comp. Heads close until about 8 o'clock !!

✓ No. 5470. Senecio multilobatus T. & G.
Comp. One plant here and another ⅛ mile on, etc.

Barnwell.

✓ No. 5471. Phacelia tanacetifolia Benth.
= P. distans Bth. !!

✓ No. 5472. Cryptanthe pterocarya (Torr.) Greene.

✓ No. 5473 Baileya multiradiata Harv. & Gray.
Comp. Rays deep golden yellow.

✓ No. 5474 Haplopappus gracilis
Comp. Rays yellow. (Nutt.) Gray

✓ No. 5475. Franseria eriocentra Gray.
Comp. bush 2 ft. h.

✓ No. 5476. Gilia ~~latiflora Gray =~~ sinuata ~~G. tenuiflora var. sinuata (Dougl.)~~

✓ No. ✓ 5476a. Gilia leptomeria Gray.

✓ No. 5477. Hymenoclea salsola T & G.
Comp. bush 2 ft. h.

— Barnwell is a little station on the Searchlight branch in the New York Mts. It is a fearful little place of tin-and-scraps-of-

board-shacks. Here lives W. J. Connor, Sante Fe Agt. but perhaps the greater local celebrity is Morrison (postmaster, $10.00 per mo. and Justice of the Peace, $15.00 per mo.) who hasn't bathed or washed in eleven years. Morrison has a really remarkable purity of speech but his notions of purity stop abruptly with the exercise of language. He was wealthy once ($90,000.00); dropped it all in a mine! And simply stayed on and sunk back as it were into a crack of the desert. "I git $80.00 a month" say Connor. "I'm Irish but born in this country. The ingineer of the mixed train gits 300.00 a mo., the conductor 250.00 a mo. and the brakeman 160.00 a mo., and I tind to the whoole feenances of the coompanie. O'Course the little stations down below do their own unloading but I handle all the bills — and we gitting 80.00 a month. Noo, youre right, I can't spend much here, — but I got a mine over in Arizony. A copper mine. It's a fine mine, and we've bonded it: and when I git me share, it'll be 60,000.00 or may be 70,000.00. I'm going to see California, I bin 34 years with the coompanie but I aint seen California. Ah, thin I'll travel California in an antymobile. Not on the train, no. I saw the Undwinter Fair but it wasn't worth the money. But I'm going to see the Panama. Yes. And if I see a nice bit land I'll buy it: I'd like a nice bit land."

The drinking water is hauled in from Goffs 50 miles away. The desert at this place is good botanizing.

Cont. p. 93,

Needles 450 ft.

No. 5478. Encelia frutescens Gray. Comp. bush 2 ft. h. Deep dark green foliage. Round bush.

No. 5479. Sphaeralcea rotundifolia Jepson = Eremelche. Malvaceae.

No. 5480. Coldenia palmeri Gray.

No. 5481. Escscholtzia

No. 5482. Cryptanthe angustifolia (Torr.) Greene.

No. 5483. Prosopis juliflora DC. var. ~~glandulosa Ckll.~~ ~~Torreyana L.~~ = P. glandulosa var. Torreyana

No. 5484. Lycium torreyi Gray Berries red, not bad tasting but lacking any decided flavor. Size of small peas. See next p.

No. 5485. Grass-Pleuraphis rigida Thurb. = Hilaria

No. 5486. Dalea parryi T. & G. Needles, in dry wash.

No. 5487. Larrea tridentata Cov. var. glutinosa Jepson.

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No. 5488. Grass Tridens pulchellus (H.B.K.) Hitchc.

No. 5489. Tribulus terrestris L.

Streets of Needles.

10 May, 1913

No. 5490. Phlox stansburyi (Torr.) Hel. See p. 79. New York Mts., near Barnwell.

No. 5491. Verbena ~~chata Bth.~~ gooding ii Brig. New York Mts. near Barnwell.

No. 5492. Pentstemon centranthifolius. See p. 78. New York Mts. near Barnwell.

No. 5493. Eriogonum reniforme Cont. p. 86. balyx segs. ovate-elliptic, inner narrower, glandular-hispidulose outside. Invol. glabrous & glaucous. Ludlow.

Lycium torreyii. Shrubs 4-5 ft. h. Colo. R. bottom. Berries rather abundant, showy for the desert in the way of berries, rather good eating in the absence of anything else, but on the whole rather tasteless and flat than having any positive character. No. 5484. (Not L. andersonii.)

Ludlow, Mohave Des.

alt. 1775 ft.

— The country about Ludlow looked very desolate as I started out, altho the abundance of Argemone mexicana in full flower about the place gave a sense of botanical excitement. After a discouraging walk over the dry hills for two miles I ran into a fairly good botanizing area.

Ludlow is the junction of the Tonopah and Tidewater railway, and the Santa Fe.

[No. 5467. Cont. Spiny shrub with grappling - hook - like branches 2 to 2 1/2 ft. h. See p. 81]

No. 5493 Cont. Noted in laboratory: outer calyx-segs elliptic, inner oblong. Calyx minutely glandular pub. Stamens a little exserted.

12 May 1913.

No. 5494. ~~Gilia~~ (Langlovsia) punctata (Hel.) Goodding

No. 5495 Lygodesmia exigua Comp.

No. 5496. Trichoptilium incisum. Comp. Dry gravelly hills

No. 5497. Heliotropium convolvulaceum Gray. var. californicum (Greene) Jtn. Dry sandy wash. [Per. white, its limb spreading rotately + tantly.]

No. 5498. Lycium torreyi Gray. Fls. lavender. Bush 8 ft. h. and as broad.

No. 5499. Argemone corymbosa Greene very abundant in the "town" of Ludlow; probably introduced by the Mexicans, section hands on the railway. A. intermedia Sweet var. corymbosa Eastw.

No. 5500. Cassia armata Watr. Dry washes, very showy.

Ludlow Mohave Des. San Bernardino Co. alt. 1775 ft.

No. 5501. Eucnide eriocephala Gray

No. 5502. Hesperocallis undulata Gray. Occasional plant on the dry rocky hills.

No. 5503. Chorizanthe corrugata T. & G. Dry rocky hills.

No. 5504. Krameria Cañescens Gray. = K. grayi Rose & Painter.

No. 5505. Comp.

No. 5506. Eriogonum ~~tricho-podum~~ trichopes

No. 5507. Chorizanthe corrugata T. & G.

— Nicotiana glauca, planted in enclosure of one of the shacks at Ludlow.

No. 5508. Psathrotes ramosissima Gray.

No. 5509. Eriogonum inflatum var. inflatum

No. 5510. Eriogonum thomasii Outer calyx segments ovate, a little linear-saccate on each side at base, the inner segments linear but roundish dilated below i.e. at base; after anthesis the outer segments become conspicuously saccate-dilated.

[I am preparing short Riog. Sketches of Lemmon, Hansen, Anderson, &c. Parish suggested that I call the paper "Californian Sub-Warthies" !! I think Mrs. Lemmon could start a suit for damages in the courts!]

Barstow, Mohave Des.
2100 ft.

No. 5511. Elymus triticoides Buckl.
A possible pest in the alfalfa at the Waterman Ranch. (makes a close dense spot.)
[I find no ref. to it in literature. Sometimes spoken of as a poor fodder in the S.W. Unless found to spread best regarded as a nuisance but not a menace.]

No. 5512. Populus fremontii Wats.
(Dept. R.C. Barneby, 1967)

No. 5513. ~~Dalea~~ Psorothamnus arborescens Torr.
Torr. & Frem. ~~D. neglecta Parish.~~ var. arborescens
Many stemmed shrub 3 ft. high, not differing in habit from D. saundersii. Wood brittle in same way. One shrub only. Mohave River bed, a little west of Barstow (2 miles say).

No. 5514. Stanleya pinnata
Showing variation in leaves. Mohave River bottom on the south bank.

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No. 5515. Cryptanthe intermedia Greene.

No. 5516. Sporobolus airoides Grass. Zacatone. See p. 55.

No. 5517. Oxytheca perfoliata T. & G.
See p. 39.

No. 5518. Cryptantha pterocarya Greene. See p. 39. Kramer.

No. 5519. Cryptantha barbigera Greene. = C. nevadensis
Calico Wash. var. inops (K. Bdg.)

No. 5520. Atriplex torreyi. Barstow.

– Mirabilis californica, no. 5375 cont. The old flowering stems of a previous season persist as dead branches, 2-forked at top, whence "Wish-bone Bush" See p. 46

– The weather on the desert is most delightful. I have never experienced a more delightful day than on our ride to Coolgardie, on Sunday May 4. It was, of course, in a way warm, very warm, but there was a sparkle and tonic in the air which it lacks after it gets dead hot. Mr. Bemis received us at Coolgardie and made tea and prepared cakes.

S.B. Parish tells me that the trustees of the Mus. Nat. Gard. were dissatisfied with the admin. of Trelease and made it so unpleasant for him that he resigned. I am very much suprised to hear this.

["Greene, E. L., was a Baptist before becoming an Episcopalian acc. Dr. C. B. Parry" – S. B. Parish, May, 1913.

Cont. from p. 83.

"Well", says W. J. Connor, Santa Fe Agt at Barnwell, "Well, I see you are a botanist. There was two of them out here, two years ago or maybe three. An old lady and an old man. Nothing must do but they must have both my bedrooms. Two bedrooms. And one of them they didn't sleep in at all. Not at all! They just piled it up with plants and they treated both rooms something shameful. And me and the wife and the children sleeping on the floor that they might have two bedrooms. They dirtied and spoiled my wife's fine sheets like you never see. They went out after plants on the hills yonder. And the old lady 'ud post the old man on a rock and she'd scout around and bring him plants for to look at. The old lady was boss. That was plain to see. And they stayed four days. And the old lady offered me a dollar for the two rooms. And I said it 'ud be five dollars. And she paid it but she was howling mad and said she'd write the company and complain on me. That was them."

What a lively story of the Brandegees. Mrs. B. was "near".

San Bernardino

1750 - 2000 ft.

For local itinerary at San B. see p. 129.

No. 5521. Yucca whipplei. Torr.
The flowers have a very luxurious feeling - a good deal like orchids.
Waterman Cañon

No. 5522. Chorizanthe californica.
Mesa. San Bernardino. See p. 115 cont.

No. 5523. Chorizanthe parryi Wats.
Mesa. San B. See p. 115. cont.

No. 5524. Cryptanthe ~~[illegible]~~ muricata Nels. & Mcb.
Waterman Cañon, c. 2000 ft.

No. 5525. Eriophyllum
Annual. Waterman Cañon.

No. 5526. Phacelia tanacetifolia Benth
Waterman Cañon. = P. distans Bth.!!

No. 5527. Pterostegia drymarioides ~~(L.) [illegible]~~ F.+M.

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No. 5528. Stipa coronata Thunb.
Mouth of Waterman Cañon.
Grass. Forming large clumps on the mesa at foot of Waterman Cañon, a handsome grass with its tall stems arising from a large stool.

No. 5529. Salvia mellifera Jepson.

San Bernardino.

No. 5530. Lupinus formosus Greene. Det. C. P. Smith.
San Bernardino.

No. 5531. Convolvulus occidentalis Gray.
Common. San Bernardino.

No. 5532. Pentstemon centranthifolius. Mesas, San Bernardino.

No. 5533. Paeonia ~~brownii~~ californica Nutt. ex T.&G.
Waterman Cañon

No. 5534. Phacelia ramosissima Dougl.
San B. Valley

No. 5535. Solanum xanti Gray.
Waterman Cañon. Looking towards var. intermedium Parish

San B. Val.= 1000-1750 ft.

No. 5536. Gilia breviculata Gray.
San B. valley. = Linanthus breviculus Greene.

No. 5537. Eharizanthe Parryi.
[Braflon = typfl loc. acc. Parish.]
San B. valley, east end, Redlands.

No. 5538. Sisymbrium altissimum L. acc. Parish. Redlands.
Two to 3 feet h.
cf. Parish, Muhl. 9:58.

No. 5539. ~~Stenotus~~ Haplopappus linearifolius DC. Fg
Comp. shrub. San B. valley

No. 5540. Eremeranthe pendulifloa Bth.
San B. valley.

No. 5541. Malacothrix californica Eich.
San B. Val.. east end

No. 5542. Malacothrix glabrata Eich. with preceding

No. 5543. Mirabilis californica Fg
San B. valley, east end.

No. 5544. Calochortus splendens Dougl.
San B. val. east end.

No. 5545. Eulobus californicus Nutt.
San B. valley, east end. = Oenothera leptocarpa Greene.

No. 5546. Cirsium occidentale
San B. valley, east end.

No. 5547. Orthocarpus purpurascens Benth.
San B. valley
- Orthocarpus purpurascens Bth. San B. Valley. See No. 21, 381. May 15-23, '13

No. 5548. Pentstemon spectabilis Thurber
San B. valley.

No. 5549. Eschscholtzia californica Cham.
San B. valley

San B. Val. 1000-1750'

No. 5550. Ceanothus integerrimus v. puberulus (Greene) Abrams
Waterman Cañon. H. & A.

No. 5551. Styrax californica Torr.
Very beautiful bushes in Waterman Cañon, 5 to 6 feet high.

No. 5552. Mimulus brevipes Benth.
San Bernardino.

No. 5553. Castilleia foliolosa H. & A.
Waterman Cañon.

No. 5554. Antirrhinum coulterianum Benth.
Waterman Cañon.

No. 5555. Oenothera contorta Dougl.
San B.

No. 5556. Diplacus (Mimulus) longiflorus (Nutt.) Grant
det. A. L. G.
Corolla cream-yellow, sometimes pale salmon, twice as long as calyx. Inner lobes of the lobes of upper lip twisted a little. Two salmon blotches on lower lip. Bush 1 to 2 feet high.
– Fraseria parryi Torr. See no. 14,646, vol. 44, p. 93.

San Bernardino Co.

No. 5557. Salvia apiana Jepson.
Upper lip almost obsolete, lower much developed, elevated into a conspicuous palate and curved upward so as to close entrance to throat, the lateral lobes small, the middle lobe fringed. Stamens long and very widely spreading, adnate by their lower portion to the lower lip (on its exposed part). Style widely divergent from the long stamens. The stamens are in their free portions wholly exserted. Style and fils. glabrous. — Bees alighting on the flowers bear down the palate by their weight so that they can thrust their tongues into the tube. The bees pay no attention to the color or state of the corolla. They enter one wilted-brown and past anthesis as freely as a fresh white corolla; but if the corolla is past anthesis they leave it almost instantly. — The bushes are tall fine-looking plants, the wand-like flowering stems with terminal racemose panicle arising from a woody white-barky base and diverging a little. — San B. near Waterman Cañon.

San Bernardino

San B. Val. 1000 - 1750 ft

No. 5558. Helianthemum scoparium var. vulgare Jepson. Nutt.
Petals 5, yellow, cuneate - deltoid.
Stamens 17, 19, 21. Stamens all turned to one side of corolla. - Waterman Cañon.

No. 5559. Solanum Douglasii Gray.
Waterman Cañon. Perennial.

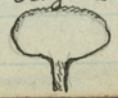
No. 5560. Phacelia ramosissima Dougl.
San B. valley.

No. 5561. = Eriastrum sapphirinum ssp. dasyanthum Gilia virgata Stend., var. dasyantha (Brand).
San B. val. east end.

No. 5562. Gilia latiflora Gray.
San B. val. east end.

No. 5563. Eriogonum thurberi Det. O.K. S.G.S.
Santa Ana River bottom, San B. val. east end.

No. 5564. Dicentra chrysantha H.A.
Slender, 4 to 5 ft. tall. Fls. lemon-yellow. Sepals saccate at base, the spreading tips with corrugate involute edges. Petals with the spoon-shaped tips and ridge-like crests down middle of back. Fils united in sets of 3, widened at base into a corky sac. Stigma flattened between the spoons, so:



= Stigma

No. 5565. Chorizanthe staticoides Benth.
San B. valley, Santa Ana River bottom.

No. 5566. Phacelia whitlavia Gray.
San B. valley, east end. = P. minor Thell.

No. 5567. Ceanothus crassifolius Torr.
Santa Ana River bottom, east end San B. valley.

No. 5568. Ceanothus ~~oliganthus Nutt.~~ ~~leucodermis~~ ~~Gr.~~ ~~Cahus~~ Nutt.
Shrubs 4 to 6, abundant in Mill Creek Cañon, forming one of the most important constituents of the chaparral. Blue-flowered and white-flowered. The former mostly on the summer slope, the slopes mostly blue or mostly white. In places the flowering was at its height and exquisitely beautiful, the shrubs being covered with thousands of soft-blue racemes.

San Bernardino

Mill Creek Cañon

No. 5569. Mimulus guttatus DC. Det. A.L.G. Mill Creek Cañon. Parish says Greene has described this as a sp. c. 2200 ft.

No. 5570. Viola nephrophylla Greene. Mill Creek Cañon.

No. 5571. Salvia mellifera Jepson. San B. valley, near mouth of Mill Creek Cañon. Tube much exserted from calyx. Upper lip prominent, erect, notched, the 2 stamens erect under it. Lower lip with small lateral lobes and broad middle entire lobe produced beyond them

No. 5572. Osmorrhiza brachypoda Torr. Mill Creek Cañon.

No. 5573. Sedum spathuli folium Hook. Face of cliff. Mill Creek Cañon. May 19

No. 5574. Astragalus ~~crotolariae~~ Benth. San B. valley, near mouth of Mill Creek Cañon. No! = A. pomonensis Jones.

No. 5575. Salix cordata var. watsonii Bebb. Next to snow drifts in Snow Creek, a tributary of Mill Creek, above Forest Home, San B. Mts. Bark spm. taken, smooth and of same color clear to base. Shrubs 6 to 10 ft. h. Scales white-hairy, the upper dilated obtuse half jet-black. Ovary glabrous. Stigmas 2. Stamens 2.

No. 5576. Pedicularis semibarbata Gray. Mill Creek Cañon, San Bernardino Mts.

No. 5577. Phacelia davidsonii Gray. Dwarf, in sandy soil, pine woods, Mill Creek Cañon. Corolla limb purple, center white, a striking color combination. Appendages free from filaments or only joined at base. Three linear clear or translucent spots alternate with each set of scales or appendages in corolla. Ovary hairy and lower part of style a little hairy. = P. curvipes Torr.

San Bernardino

San B. Val. = 1000 - 1200 ft.

Forest Home, Mill Creek Cañon. 5000 feet.

No. 5578. Ribes amictum Greene. Ovary white-hairy, also with subulate red spines which are pilose, and also with short gland-tipped ones in between! Mill Creek Cañon. = R. roezlii Regel, not R. amictum!

No. 5579. Salvia mellifera Jepson. Below mouth of Mill Creek Cañon.

No. 5580. ~~Gilia~~ Linanthus lemmonii Gray. San B. valley, east end.

No. 5581. Mimulus fremontii (Benth.) Gray. Det. A.L.G. Ennanus fremontii Corolla crimson, the lobes short and broad and equal, but bilabiately arranged so that the corolla is truly bilabiate though not strongly. The corolla has a distinct palate and two yellowish bands down throat. — San B. valley.

No. 5582. Quercus vvislizenii var. frutescens. Mill Creek Cañon. Shrubs 5 to 10 ft. h.

No. 5583. Asclepias californica Greene. San B. val. east end.

No. 5584. ~~Gilia~~ Linanthus dianthiflorus dianthoides Endl. San B. val. east end.

No. 5585. Ribes nevadense Kell. Ovary with glandular-tipped hairs. Petals white, slightly shorter than the reddish sepals. Mill Creek Cañon, (Snow Creek) circa 6500 feet.

No. 5586. Ribes roezlii Regel. Compare with #5578 which is apparently the same except for very slight differences. 5586 has a white woolly ovary and subulate red spines but no gland-tipped hairs and the spines are glabrous. Mill Creek Cañon.

San Bernardino

San B. Val. 1050 - 1750 ft.

Mill Creek Cañon.

No. 5587. Arctostaphylos glauca Lindl.
Taken from a (small bush) large individual 22 ft. h. and 3 ft. 3 in. circ. Berries full grown but green. Old berries of a previous year from the ground. Stone globose, solid, not separating into nutlets, Berries very glandular sticky on surface but not hairy.

Mill Creek Cañon.

No. 5588. Arctostaphylos drupacea Mc Br. pringlei
Low broad shrub 3 ft. h. and 5 ft. broad. San B. val. east end, in Mill Creek bottom. (= A. drupacea mcBr.)

No. 5589. Arctostaphylos ~~patula~~ parryana Lemmon Var. Pinetorum ~~Greene~~.
Mill Creek Cañon

No. 5590. bursinum ~~californicum~~
San B. val. east end. 3 to 4 ft. h.

No. 5591. Salix ~~prob. form of S. Parishiana~~ lindsiana lasiandra Benth. Det. C. Schn.
The common willow in the lowlands of the San B. valley and along streams.

No. 5592. Pinus ~~coulteri~~ Don
Mill Creek Cañon.

No. 5593. Opuntia vaseyi Britt. & Rose ? = O. occidentalis var. v.
The common Opuntia in the San Bernardino Valley on sandy mesas and flats. Flowers lemon-yellow, or pink or reddish, — all one color on one plant. The yellow is one species, and the pink-red another acc. Griffith says Parish. I can see no differences vegetatively in the plants and the flowers look alike save for color. Parish is of a similar mind.

No. 5594. Salvia carduacea Bth.
Very showy when in full flower.
Mesas at San B.

No. 5595. Eleocharis montana R&S.
Sedge. San B.

No. 5596. Galium
Woody stems. 3 1/2 ft. h. Sepals 4, apiculate. Fls. greenish, apparently perfect. San B. — Waterman Cañon.

No. 5597. ~~Hosackia~~ Lotus strigosa Nutt.
San Bernardino approaches var. hirsutus.

San Bernardino

San B. Val. 1000-1750 ft.

No. 5598. Koeleria cristata (L.) Pers.

Grass. San B.

No. 5599. Oenothera bistorta Nutt.

San Bernardino.

No. 5600. Ceanothus ~~oliganthus Nutt.~~ ~~leucodermis~~ ~~divaricatus~~ Nutt.

Waterman Cañon.

No. 5601. Bromus diandrus Roth. Bromus villosus var.

Grass. San B. gussonii Asch. + Gr.

No. 5602. Bromus rubens L.

Grass. San B.

No. 5603. Cryptanthe muricata var. jonesii

Waterman Cañon

No. 5604. Oenothera bistorta Nutt.

San B. valley, east end.

No. 5605. Opuntia parryi Engelm.

Cactus. 3 ft. h. Mesas. - San B.

- Clematis ligusticifolia (5 leaflets!)

I never saw such vines elsewhere as in Mill Creek Cañon. They ran up Alder trees (Alnus rhombifolia) to a height of 50 feet! and riotously. Lots of them!! 40 to One of the cables measured 12 inches in circumference with a tape! I was reminded of Vitis californica in northern cañons.

15-23 May 1913.

SW. San Bernardino Co

Shrubs in San Bernardino Mts., Mill Creek.

Forest Home about 5000 ft. Snow Creek, 6500 feet. Mouth of Mill Creek at valley floor = 2000 ft.

Three most important species: Ceanothus divaricatus, Quercus dumosa, Quercus wislizenii var. frutescens.

- White & Black Sage in the Chaparral.
- Yucca whipplei
- Adenostoma fasciculatum forms a broad band below the three first mentioned.
- Ceanothus integerrimus, occurs at the higher altitudes.
- Cercocarpus ledifolius, small shrubs in Snow Cañon.
- Castanopsis sempervirens, on the upper slopes, abundant.

- Snow drifts in Snow Cañon, perhaps 20 feet deep now.
- Sarcodes sanguinea, in fl!
- Pinus coulteri, 10 ft. 6 in. circ. at 4 ft. 50 ft. h!

- Took this trip with Parish in his cart drawn by "Flora", fat, rather lazy and very windy. But we had fine botanizing.

Cont. p. 147

San Bernardino

May 19, 20, 21

Forest in Mill Creek Cañon,
at Forest Home circa 5000 ft.

- Pinus ponderosa. One tree = 18 ft. 6 in. circ. at 4 ft. Another = 18 ft. 8 in. circ. at 4 ft.
- Pinus lambertiana.
- Libocedrus decurrens.
- Quercus Kelloggii.
- Abies concolor.
- Acer macrophyllum.

This forest is a thin one cañon bottom and in the colonies on the sides of cañon walls. Alnus rhombifolia along streams.

— Dr. C. C. Parry lived at Crafton in East end of San Bernardino Valley for a time in 1876 and there discovered Chorizanthe parryi and other new plants. W. H. Parish of San B. was interested in plants, loved their beauty and loved to have them in a garden, but had no scientific bent towards plants. It was, however, W. H. Parish's interest in plants which directed the attention of S. B. Parish towards them, who first of all wanted to know their scientific names. W. H. Parish had a collection

of florists' catalogs but nothing more. The brothers wanted to find out about the new Lilium parryi but could find no mention of it in the catalogs. Came Lemmon to San Bernardino who named wrongly a half dozen plants for S. B. Parish (wrongly as Parish afterwards discovered and intentionally on Lemmon's part as he believe), telling Parish meanwhile that it was customary to send a fee of 50 cents for each species named. This intelligence rather dashed Parish's interest but he soon met Parry and learned that there were other kinds of botanists than those who wanted a fee for naming a specimen; for Parry was a most delightful and charming man.

But the Lemmons were full of guile and they certainly made a very unfavorable impression upon their associates at the New Orleans Cotton Centennial for example. (See p. 120). The Lemmons were dreadfully impecunious. They couldn't or wouldn't work — Mrs. Lemmon was probably always too feeble constitutionally — and their only graft was botany which had never been exploited in the State in the way in which they exploited it. They got passes from the railway and advertised themselves wherever they went. When in later years I fell heir to the Lemmons I accepted them as "honorary members" as others had done before me. Lemmon was carried as a Dead Head on the Erythea list and, so on.

Victorville, Mohave Des.

San Bernardino Co. 2711 ft.

No. 5606. Lotus oblongifolius Greene.
Mohave R. bottom.

No. 5607. Eriogonum maculatum Heller.
Det. O.K. — S.G.S.

No. 5608. Hydrocotyle ranunculoides L.
Mohave R. bottom

No. 5609. Larrea ~~tridentata Cov.~~ divaricata Cov. ~~var. glutinosa~~ Jepson.
Petals in full anthesis vertical by a twist at base and rotately spreading.

No. 5610. Mimulus guttatus DC. Det. A.L.G.
Mohave River bottom.

No. 5611. Glycyrrhiza lepidota Pursh.
Mohave R. bottom. Corolla whitish, with lavender-tipped keel.

No. 5612. Pentstemon palmeri Gray.
Corolla pale lavender-white with line markings on lower lip. Shoe-brush tip to the

sterile filament (i.e. very conspicuously and densely hairy. Corolla with very short tube and much expanded throat, the three lobes of lower lip equal, spreading downward; tips of upper lip recurved. Upper pair of filaments very slightly hairy at base, the lower pair and the style glabrous or essentially so. — Gray makes a great deal of "upper connate-perfoliate leaves"; — these in mine hardly sessile. = P. grinnellii Eastw!!

No. 5613. Eriogonum deflexum Mesas.

No. 5614. Eriogonum ~~mohavense~~ E. baileyi S. Wats. var. brachyanthum (Cov.) Jeps.

No. 5615. Eriogonum gracillimum
Det. O.K. — S.G.S.

No. 5616. Eriogonum ~~molestum~~ ~~var. davidsonii~~ baileyi var. baileyi

No. 5617. Chorizanthe thurberi

Victorville, Mohave Des
2711 ft.

No. 5618. Eriogonum reniforme. Torr. & Hem.

No. 5619. Eriogonum pusillum

– Alnus rhombifolia, a tree or two at the water gap just above the town.
– Nigger-head Cactus, barrel type, same as along Colorado River
– Dark cylindric-barrel Cactus, same as at Swallowneat Bend along Colorado River (see no. 5277).

No. 5620. Eriogonum nidularium. Mesas.

Belongs with p. 82.

No. 5621. Opuntia acanthocarpa Engelm. & Bigel. Cactus. Three or four feet high, branching. New York Mts. Common Barnwell.

– As I wandered thru the barrancas with their box-cañon-like turns and angles a large gray-brown Coyote broke from a corner, terribly startled but not disturbing the stillness of the desert as he made off.
– Lycium cooperi, no. 5329, cont. from p. 35. Corollas very large, the lobes spreading rotately or mostly a little backwards, each lobe with revolute margins. Corolla white. Branches mostly at right angles. Shrub dense and intricate, 3–5 ft. h.

– Chorizanthe parryi, no. 5523 cont. from p. 94. Flowers numerous, spicate. Perianth white, its segments erosulate, the inner half as large. Involucral spines 3 large, 3 small. – with no. 5522.
– Chorizanthe californica, no. 5522, cont. See. p. 94. Flowers like Eriogonum spergulinum. Perianth white, its lobes broadly oblong, very obtuse. Involucres 3 at each node, mostly with 3 unequal teeth, sometimes with 4 in 2 equal pairs or only 2. Perianth one to each involucre, its tube slender, a little exserted in anthesis. Anthers brown – Sandy mesa, San B. amongst Opuntia, Salvia carduacea, etc.

– Audibertia incana. Upper lip sharply notched; lower lip of 3 equal lobes. Two lower stamens fertile, exserted, 2 upper short and sterile. Parts all deep blue except the yellow anthers. Corolla tube short, white-hairy inside. Filaments with a short connective at summit shown by a somewhat kneed joint – or by a tooth. Shrub 1 to 2 feet high. Showy shrub as the whole, its flowers small but deep blue and the foliage gray. No. 5435. The above notes from the dried specimen and from memory of the shrub in the field –). See p. 71.

– Nelson, David. Calif. collector. Cf. New Types, p. 259.

– Mirabilis laevis, no. 5375, cont. from p. 46. The old flowering stems, of a previous season, persist as dead branches, 2-forked at top, whence "wish-bone Bush".

– W.G. Wright. S.B. Parish says of him that he was a born collector, by instinct a collector; he collected everything. He had a collection of minerals, of plants, of birds-eggs & of birds, of postage stamps, of old hats, of oriental books, of shells, and so on. As executor Parish was obliged to dispose of all these collections by sale to the best advantage according to order of the court. Wright willed his fine collection of butterflies to the California Academy of Sciences. Parish regretted that he had not similarly disposed of all this plunder as it would have simplified the labor very greatly. His house and barn were full of stuff. He never threw away

anything. If he had a notice from Wells Fargo five years ago that a package was at the office for him such a notice would be found in his papers. The Cal. Acad. sent a man down to pack the butterflies for shipment. The Acad. was much disturbed to find that the types of many of Wright's new species were not in the collection. Later on when the hay was removed from the barn, a trunk was found under the hay. This trunk contained the last types and many other specimens packed just as they had come back from Chicago whither Wright had sent them for the making of the color-photo plates for his butterfly book. Wright had 100 copies of the "Butterflies of the

West Coast" sent him at San Bernardino from the printer in San Francisco where the book was printed. The rest of the stock was destroyed in the San Francisco earthquake, a few (?) months later. Wright had, however, taken the precaution to run off a thousand or so extra copies of the plates and these had been sent to San Bernardino before the disaster. Wright lived next door to the Rolfe's and was very friendly with this family. Peter Olsson-Seffer married one of the Rolfe girls.

– McClatchie, A. J., died at Monte Bello near Los Angeles on Feb. 11, 1906, aged 45 years.

– Eucharidium concinnum in fine show in the Martinez Hills, Mar. 25, as seen from Santa Fe train.

– Lemmon, Mrs. J.G. Her struggle with Colonel A. Andrews in the matter of the New Orleans Cotton Exposition was fully exploited in the newspapers of the time. See letter of Colonel Andrews in the San Francisco Examiner, Feb. 28 of Vol. 48. In that letter are quoted letters from Julia Ward Howe – "I found her a very troublesome person to deal with" – New York, 8 Feb., 1886 – and from Isabel Greeley – "I found her a troublesome and designing person and avoided as much as possible any relations or words with her." – Claremont, N. H. 13 Feb. 1886.

Under date of Mar. 17, 1889, "Mrs. Lemmon Vindicated" appeared in some daily paper

about the Bay. Signed: Mrs. J.G. Lemmon [!!!]. – [Taken from S.B. Parish's newspaper clippings.]

– Grant, Geo. B. Has left Pasadena, given up his winter home and returned east. Gave all his western plants to Parish. Was a prodigious collector and had 40 or 50 duplicates of various species, sometimes of very common ones. Gave a lot of his pamphlets to Parish. He is a man of considerable means. He had never met Parish. His business had to do with the manufacture of a certain kind of machinery; it had been developed into such shape that it required his attention only a month a year.

– Manzanita. Carl Purdy says he "has succeeded admirably in transplanting Manzanita" Young plants 1/2 to 2 ft. h. Lose very few. "Madrone very difficult, lose 4/5, but not so with manzanita which I am using freely in garden work. Also using Ceanothus, especially integerrimus which I consider very fine."

Manzanita seedlings may be found in quantity in any burn two years after a fire or in any cutover land. It does not make any difference. But they won't come up under old trees. How ceanothus is

like and is different from Manzanita. Ceanothus comes up as seedlings on burns but not on cutover lands.

I once saw yellow Brodiaea ida-maia on a hillside east of Eureka, all yellow!

All the poppies can best be propogated by root-cutting: Oriental Poppy, chop up fine like salad; Romneya,? – yes. Jim done it; and I believe you can do it with Meconopsis. I am sure you can?" – C.P.

– Lyon, W.S. Calif. Collector. Cf. Sargent, Silva, 4:133.

— S.B. Parish developed his interest in plants from his brother W.F. Parish who had no scientific interest in plants but loved to cultivate and to admire. Parish was very much interested in getting his plants named but had no books and knew no botanists. Along came Lemmon who said it was customary to enclose a fee of 50 cents for naming a plant. Parish did not warm to this but finally heard of Dr. Parry who was then stopping at Crafton, a small place at the eastern end of the San Bernardino Valley. Parry gave him an introduction to the native plants and Parish at once learned that there were other kinds of botanists than those who charged fifty cents per determination" — Told me by S.B. Parish, May, 1913. Compare page 110.

— Lewisias, sent by Purdy from his Ukiah garden, May 28, 13.

	Petals	Stamens	Stigmas
Lewisia cotyledon	8	7	3
Smooth-edged leaves.	9	7	3
Lvs obovate-oblanceolate, long. Bracts ovate, acute.	9	6	2
	8	6	2
Lewisia Purdyi	8	7	3.
Like preceding but lvs orbicular-oblanceolate, short.	9	7	3.
	9	7	3.
Bracts elliptic, obtuse.	9	7	3.
Lewisia howellii	8	7	3.
Leaves with cuspid narrowly membranous edges.	9	6	3.
	8	6	2.

There are, as seen, three leaf forms but the flowers do not differ in any detail of structure and they look alike altho there may be a shade of difference in color. The petals are pink with darker

veins and whitish margins. They are oblong and notched at tip, 7 (or 8) lines long. The fleshy stock is 1/2 to 1 1/4 inches thick.

Purdy thinks the flowers of no. 2. are different from both the others in shape. I failed to get his point but he says it is very noticeable in the garden. All the plants were sent to the Botanic Garden, June 4. [By me]

- Solandra in leaves from Purdy. Petals pink, 5. Stamens 4. Sepals with glandular-ciliate teeth. Flower 2 lines long. Sent to Botanic Garden, June 4.

- Parry, C.C. His botanical trips in S. Calif., Mohave Des., etc were described in S. F. Bulletin. (See refs. in Proc. Davenport acad. 6:49-50).

Big Freeze in Southern Calif.

- Pepper Trees, did not notice any permanent damage. They simply lost all their leaves and became temporarily deciduous but suffered no other inconvenience apparently. All in full leaf now.
- Eucalyptus. Suffered badly Trees 60 to 80 feet high had their foliage killed and the new growth is twiggy on the main branches, giving a a very singular appearance to the trees. The effect will doubtless be to modify the architecture. Many small trees were killed but in other spots neither young nor old trees were appreciably injured.
- Grevillea. In similar case with the Eucalyptus. Trees

60 feet high in sheets of San Bernardino were very twiggy in the main branches and presented a singular appearance.

– Phoenix canariensis. Trees had their foliage killed or badly injured, but they will gradually recover and the damage will disappear in a year or so doubtless.

– I saw a Eucalyptus viminalis at Ontario, 80 ft. high, that was not injured.

– Orange. Whole orchards of young trees killed but many sprouting from the roots. Great quantities of dead wood being taken from old trees. Many orchards being cleared out, but usually the orchardists are simply taking out dead wood.

– At San Bernardino I stopped at the Hotel Augustine but was much entertained by the Parishes. Had not seen Parish in twelve years! but found him as genial and amiable as ever. He and Mrs. Parish live in the same simple style on their farm. The house is the same rambling cottage affair, at this time with a lawn of Yerba Mansa in front of it, like a small field of flowering Anemones.

Parish took me up Waterman Cañon behind San Bernardino on a day's botanizing. Another day we went to call on Prof. Spaulding (U. of Mich.) who is an invalid at La Loma. Then we took a three-day trip up the east end of San Bernardino valley, through Parry's old botanizing ground, to Mill Creek; up Mill Creek to Forest Home and Snow Creek (See pages 109, 110, supra.)

Berkeley

No. 5622. Corylus ~~rostrata~~ cornuta var. californica.

No. 5623. Phacelia nemoralis Greene.
3-4 ft. h.

No. 5624. Rhamnus californica Esch. typica C.B.Wolf

— Chorizanthe breweri Wats. First spm. mentioned by Wats. is Brewer 456. Involucres 1-flowered. Flower not sessile, whitish, the outer lobes of the calyx elliptic, the inner oblong and smaller as well as shorter. Stamens 9 or apparently 7 in one count. Calyx cleft over half-way down. Flowers not sessile but very shortly pedicelled, included, well down in tube of involucre and apparently

never exserted. No. 501 Brewer, 2nd spm. mentioned by Watson, is the same as to the flowers but the involucres are scarious margined. There are only a few invols. of this in Hb. U.C. In neither case are the calyx-lobes fringed — any of them. They appear to be quite entire. In both cases, i.e. both nos., the flowers are very deeply seated.

Brewer 456, San Luis Obispo
" 501 Santa Margarita Val.

My notion is that this species may well by a synonym of C. staticoides.

In both numbers the calyx lobes are well marked by a few long hairs on back.

Saratoga

900 ft. S. Cruz Mts.

Santa Clara Co.

– went to Los Gatos and was met by the Beans in their machine and driven to their summer cottage, Wildflower Hill, at Saratoga. Friday eve. Sunday walked along the foothill trail to San Jose with Miss Rowena Beans. It is a very beautiful trail through chaparral and clumps of trees in cañons, with fine views over the Santa Clara Valley.

No. 5625. Sphacele (=Lepechinia) calycina Pth.
Bushes 4-5 ft. h. Cor. white and also pale lavender

No. 5626. Verbascum blattaria L.
Hard dry soil of footpath.

No. 5627. (Discarded insect damaged) Wyethia glabra Nutt.
In a little flat in the hills.

No. 5628. Malacothrix floccifera
On sand slide in cañon.

June 22, 1913

900 ft.

No. 5629. Holodiscus discolor Maxim. var. franciscanus Jepson.
14 ft. h!

No. 5630. Smilacina racemosa var. amplexicaulis Nutt.
Woods of cañon side.

No. 5631. Cercocarpus parvifolius
12 ft. h. = C. betuloides Nutt.

No. 5632. Adenostoma fasciculatum.

No. 5633. Arctostaphylos H. & A. tomentosa, var.

No. 5634. Psoralea strobilina H. & A.

No. 5635. Garrya elliptica Dougl.

– An impromptu meeting of the California Botanical Society was arranged for Sunday afternoon at the residence of Mr. Blaney. About 20 people came. I explained the objects of the Society and Miss Beans took the names of prospective members.

Santa Clara Valley, 23 June

– On Monday afternoon drove from Los Gatos to Campbell and thence up one of the tongues of the Santa Clara Valley running towards New Almaden, a fine drive in country which has not been wholly "orchardized."

– In the '80's and '90's if you asked any chance person in Cal. the name of a botanist, if he knew the name of a botanist the chances are very ghastly that he would have known the name of Lemmon and only Lemmon. And this was natural. Mr. & Mrs. Lemmon had traveled up and down this state everywhere and had told everyone that they were botanists because they were proud to be such. In Mrs. L's eyes Mr. L. stood alongside of Asa Gray & Sir Joseph Hooker in grandeur. For had they not talked with Mr. Lemmon and taken him by the hand? Dr. Gray had even laid his hand on Mr. L's shoulder and called him "Professor Lemmon". And shall such glory fade? How transient it is! In the last (July) no. of the Bull. S. Cal. Acad. Sci., Grinnell refers to Lemmon in an aside as "an odd fellow"! Of such is fame!

– Meehan, Thos. An unfair comment on him in Erythea, 1:144, top of page.

– Rhorizanthe virtridei Brandegee. Spm. by Mrs. B. from Berro Trail, Santa Lucia Mts, June 9, '09. Involucel 2-flowered.

Calyx very remarkable cleft, each division of the cleft tube with 2 lobes at top.

Roughly something like this when spread out.

Calyx laid open.

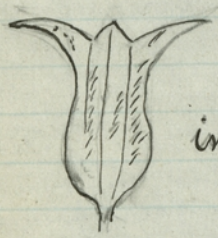
Flowers long-pedicelled, one a little higher than the other.

Stamens 9, inserted at base.

– Calif. Collectors. Botanical Exp. to the West. The idea that you are right and that the other fellow is wrong and that he knows he is wrong and is acting against his conscience is delightfully expressed in Am. Jour. Sci. ser. 2, 33: 387.

– Eriogonum deflexum, Torrey, Ariz. Bull. 2:2. Skeleton Weed.

– Chorizanthe pungens. Benth: Notes on K. Brandegee's Rockspur near Monterey. Segments or teeth of invol. alt. long & short, all membranous-margined. Calyx white, its lobes oblong, equal, erosulate at the summit, broadly, a few hairs on back of lobe. Stamens 9, inserted at base. Flower 1, definitely but shortly pedicelled. Involucre 6-costate, the alternate ribs smaller, corrugated between the ribs, also sparingly hairy.



involucre: C. pungens.

– C. cuspidata Wats. notes on Davy 1172, S.F. This is good cuspidata. Its calyx is like that of pungens above. Its

involucre is also like the pungens spm. noted save not so hairy and no membranous margin to the involucre.

C. pungens. notes based on Surf, K. Brandegee. Same as pungens noted above but invol. a trifle shorter. In same head I find invols. with and without scarious margins to the teeth!!

C. pungens. Notes on Chandler, Pac. Grove, #334. Same as Brandegee's Rockspur! Some invols. with and some without scarious margin to achene, even in same head.

C. douglassii. A sheet collected by Parry & so labelled in his hand, prob. from Santa Cruz, is exactly like Rockspur spms. above noted in its invols. & in every other way that I can see that is of any

importance. I have worked over these things laboriously and conscientiously and I cannot see how C. douglasii can be any good as a species distinct from pungens, if Parry is right in so naming this species., — and he had gone to Kew to look up specially the Charizanthe types.

C. diffusa Benth. as rep. by Heller 6750 Monterey is the same also. Possibly C. douglasii and C. diffusa are a shade nearer each other than to pungens.

C. andersonii, I should cheerfully put in type with the others, i.e. with diffusa and douglasii first of all and the whole with pungens.

— Funston, Frederick. "was with the Death Valley Exped. as botanist. Funston: "Dikeman, I do not know any more botany than you do". Dikeman: In that case you don't know any." Funston: "That's it". Dikeman found him drunk in Pah-rump Valley, an empty nine bottle beside him, and took him in charge. Funston: Dikeman if you had a daddy in Congress who got a job for you at $125 per mo., wouldn't you be a fool not to take it". Dikeman: Well, you would be". Funston: "That's me"

Funston's father was "Old Fighting Funston" in Congress from Kansas. After the Philippine war Funston the younger was to be run for Gov. of Kansas. Mark Hanna was afraid he'd carry the state and take a Dem. legislature in with him, so that there would be Dem. senators elected and so went to McKinley and asked the President to appoint him Capt. or Colonel in the Regular army, which was all Funston wanted or expected. McKinley made a slip and made him General.

Funston is a newspaper general. He always stands in with the newspapers and is his own press agent. He always has been and it is this thing which has made him." — James Dikeman, member of the Death Valley Expedition. 14 July 1913.

- Chorizanthe clevelandi. Calyx white, its lobes broadly oblong, truncate, denticulate or erosulate, the inner half as long as the outer. Flower shortly pedicelled. — Mt. Konocti; Jepson. Stamens 3! inserted at base!
- C. valida Wats. A fragment of type in Hb. U.C. Invol. spines rather short, straight. Calyx white, its lobes oblong, truncate, erosulate at apex, the inner half as long as the outer. Invol. 6-ribbed, wrinkled between the ribs, almost glabrous. — Seems as if it had good chars. — but collectors ought to be able to find it.
- Chorizanthe membranacea Note on Davy, Calaveras. Calyx segments obovate or spatulate, clawed, united only at base. Flowers 2, pedicelled.

- Hollisteria lanata. Heller's & Davy's spms. Flowers always 2, so far as I notice, shortly pedicelled, the longer pedicel quite conspicuous as a stub when the flowers are taken out. Involucre of 3 nearly distinct bracts but clearly joined a little at base, linear, 2 of them lateral and next to the foliaceous bract, the third opposite and next ovate the axis. I do not make out clearly that these 3 form a unilateral bract as said by Watson
- Lambert, J.B., of Yosemite. Mentioned by Lemmon, Pac. Rur. Press, 16: 162 (1878).
- Mrs. R. M. Austin. Article in Bot. Gaz. vol. 8 on Sarcodes.
- Hitchcock, A.S. Called today. Is making a circuit through the western states on his grass work. Has a very nice manner and a gentle blue eye that is very friendly. — 12 July 1913

Berkeley

– Cercocarpus minutiflorus Abrams. (Sheet borrowed from Abrams) Abrams 4901, Alpine, San Diego Co. 10 July 1912. I cannot see but that this is typical C. parviflorus, at least typical of the usual thing in middle Cal.; far less "off" than Baker's Modoc spm. etc.

– Arctostaphylos parryana Lemmon = A. patula in appearance. Berries round-ovate or pyriform, 4 to 5 lines high.

Leaves round or rather broadly ovate, abruptly acute, 1 to 1½ in. long – in short Abrams, 2716 San Antonio Mts. This is parryana as I take Abrams on my visit to Stanford.

Stone of much same shape

as berry, 4 lines long, not separable into nutlets, with about 8 long, sharp low ridges. Sparingly short hairy berry. Berry wrinkled coarsely in drying. A. patula has a depressed berry which is strongly lobed (in unripe berries) and very finely wrinkled almost as if reticulated.

– Eriogonum diversifolium. I find uniformly 2 flowers to anvol. in Brandegee's Edgewood, + Lake Co + Tulare Co. Also so Erythea vol. 1.

– Polygonum tidestromiae nats. I believe this to be only a form of P. californicum. P. Kellogii is not distinct from P. imbricatum as I view the two at present.

– Engelmann, Geo., in S.H. Nov. 1880. Cf. Pac. Rur. Press, 20: 349. I knew all about oaks of U.S. he say in effect but when "I went into the field (in Cal.) I became confused with their variation."

I may say for myself that my experience is just the reverse. I am so familiar with field variations that I know what to expect. In the herbarium I am often uncertain because the fragment, is separated from the whole tree.

– Parish, S.B. A Botanical Establishment in S. Calif: An account by Parry of the Parish Bros.; in Pac. Rur. Press, 21: 402 (1881, – June 4).

– Staphylea bolanderi. "California Bolom Bush". cf. Pac. Rur. Press, 18: 193.

– Dinkey Grove Big Trees. W.A. Sanders estimates 100 trees in an account of the grove (Pac. Rur. Press, 18: 162)

– White Sage (presumably Artemisia tridentata), unequalled for fattening stock after frost has made the herbage sweat (cf. Pac. Rur. Press, 2: 278)

– Darlingtonia californica. Grows on Black Hawk Creek, Quincy (cf. Pac. Rur. Press, 2: 249)

– Mrs. C. C. Ames (Mary Pulsifer) lived in Plumas Co., Indian Valley. Cf. Pac. Rur. Press. 2: 249.

– Larrea mexicana and Shellac and Lac-dye. See article by B.B. Redding, Pac. Rur. Press, 19: 178, 293. Indians, anc. S. Cal. used the product to cement broken pottery and make woven baskets water-tight. An analysis by Stillman

is in Science Record, Feb. 1880. Redding also quotes Wheeler's Survey, ? vol. 5. I think.

- Ceanothus oreganus. Oregon Tea Tree. Pac. Rural Press, 1:21.

- Watson, S. Calif. collector. The only record I have of a plant collected by Watson in Cal. is Claytonia triphylla Wats. n. sp. collected at Cisco, July, 1867. (Proc. am. acad. 10:345)

- Arctostaphylos glandulosa Eastw. on Mt. Tamalpais, 47 sprouts counted on a crown within one square inch! — W. C. Matthews, Bot. 104, Jan. 27, 1914. Same as my no. 5720.

- Quercus lobata. Large tree fell and killed Japanese in Ojai Valley. — See The Ojai, Jan. 30, '14

- Bigelow, J. M. Botanist with Whipple's Pacific Railroad Exped. For map of route in Mohave Desert see vol. 11. "Whipples Rep., map. no. 2".

- Fremont, J. C. See his route across Tehachapi marked on "Passes in the Sierra Nevada" vol. 11. Pac. R. Reps. His route is also indicated on other maps bound in near the one mentioned.

- Took dinner with the Parishs on Sunday May 18, 1913 at their home in the San Bernardino Valley. The 3-day trip to Mill Creek was on Monday - Wednesday following. Cont. from bottom p. 109.

— C. S. Sargent is here for a few days. Came into Calif. from the north, S. F., went to monterey, San Mateo etc. Today I called at the Palace and took him to the Cal. Acad. Sci. He is stentish, big somewhat Roman nose, heavy lips, full eyes, pointed iron-gray beard & almost white close-cropped hair. He was fairly urbane, the urbanity of the wealthy man, for there is something of the plutocrat in his manner. He wants many things in the way of specs. and readily asks you to go to the ends of the state for them. Miss Eastwood & he greeted like old friends. They indulged in considerable reminiscence of a personal nature. Miss E. said that she rassa into a lot of Jones' plants at Brit. Mus. and that scarcely any of them were named right. She asserted that she had access to the types and must have been right. It was only an exceptional plant of Jones' that was named correctly and the finding of one such made a strong impression on her. I was much surprised at this wholesale arraignment of Jones'; while I know him to be dogmatic, arbitrary, highly self-opinionated and very narrow-minded in many respects. But I felt nevertheless that he probably had—

— cont. p. 150

Vacaville. July 30.

– Came to Vacaville, Tuesday morning July 29.

– North wind.– Clarence Uhl says that in his experience at Vacaville which must be about 30 yrs that the North wind does not blow from July 1 to Sept 1. There was however an exception this year, during the hot spell early in July.

– Douglas, David. Re. his routes. consult Col. J. J. Abert, U.S. Map of the Oregon Ty. 1838. Bancroft Collection. Shows finely the Douglas country and the names of that place time.

– Eschscholtz. Calif. Collection. See Kotzebue's Voyages, Eng. Trans. Bancroft Collection.

– Cont. from p. 149

Excellent field knowledge of the Great Basin vegetation. However it would be out of keeping for an excellent botanist to have so many glaring personal faults. Sargent thought the N.Y. Bot. Gard. people were not so well-do financially as they had been led to hope. Sargent is being entertained at luncheon by P.E. Bowles, who is said to have a wide practical acquaintance with plants and cultivates a great variety of them at his Oakland home. He was

– Betel, of Colorado, a fungus man, was calling at the Academy.

– Suksdorf, W.N. is in western Wash. just now collecting thistles. I have not seen him altho he called.

– Sargent: cont. from p. 151.
commented on the strange manner of life of the Brandegees, their daily habits, coming to S.F. each day for their dinner, living in mean rooms and really having no home.

Sargent thinks Salix nigra does not grow in Cal. since he makes the Texano-Mexican tree to be S. wrightii and real S. nigra ends with the Mississipii River. I think this must be a case of fine spliting.

Miss Eastwood says A.A. Heller desires to sell his herbarium for $1000.00, that he intends to leave the Univ. of Nev. and settle on a place that he has

near Oroville. She could not tell me if he intended to quit botany but he cannot well do botanical work without his herbarium. The life of a University is widely killing to a man of Heller's instincts for he has tried at least three colleges.

R. Hopping says: "I have just seen Beamothus fresnensis. It is absolutely distinct from C. cuneatus which has cream-col. fls. & this has blue flowers. Its leaves are minute; its limbs are very heavy. One would expect slender limbs with minute leaves. It is lower in habit than C. cordulatus and grows with it. That is C. fresnensis grows high above C. cuneatus. I have seen a Sequoia gigantea bunch so rotted by fungus that it shattered all to pieces

when cut down. This is very rare and I have noted only one or two cases."

- California collectors: Picture of David Douglas in Appalachia, 13; 54. Also refs. to J.D. Whitney, Clarence King, etc. See separate.
- Lyell, Mathel. Letters to Nuttall. See Lyell, Journals, Reprint, Univ. Ore. See Index in back [U.C. Lib.]
- Life of Audubon in Everyman's Library. See Index for mention of Nuttall. Nuttall is also mentioned in last quarter of book on other pages than those indexed
- Nuttall + Townsend, mentioned in "Adventures of Captain Bonneville" by Irving, p. 370 [Putnam. N. Y. Ed. of 1849.]

- met the Siberia at the Pacific Mail Dock, inbound from Japan-China, to greet Dr. A. Engler of Berlin and help him on his way to join the Phyto-geographers at Colorado Springs. I have not seen Engler since seven (7) years ago at Berlin. He has aged quite a bit but seems still vigorous and hearty. Like all or at least nearly all great men he is very simple. He showed this by his unaffected ways, his child-like interest in the street sights of the city and his appreciative expressions for my helps and attentions. I took him to his banker, to lunch, to the railway ticket offices and helped him secure his round trip ticket over the proper lines.

- Stillman, J.D.B. Cal. collector. cf. Proc. Cal. Acad. Jan. 1872. Stipa stillmanii Bolander.

- Ginseng. Cult. at Lilydale Ginseng Garden, Santa Cruz. C. H. Mc Isaac, - "2 crops sold." Jan: 1914

Berkeley

— Gentiana sceptrum Griseb.
Allied to Oregana.
Leaves always in 2s, not in 3s as often in Oregana, very upright in growth (tallest 18–24 inches high); corolla not dotted or scarcely, the lobes erect! (in oregana spreading). Leaves thinner than in Oregana, a soft green as in alfalfa leaves. Corolla deep blue, throat & border; in Oregana the border only,—and somewhat lighter (half as deep a blue) No appendages! a mere short very blunt-point— Brought in by Robt. Brandt, Aug, 1913, from Gualala.

— Robt. Brandt says: Vaccinium ovatum is decreasing in our county because fire is kept out. In the Redwood county where logging is going on Vaccinium ovatum comes in abundantly. Comes up the first year from the old roots and bears berries the second year. Later on it is likely to be overtopped and shaded out by Ceanothus, especially C. foliosus. We pick the berries in quantity for home use but also for marketing in San Francisco. A man can pick 10 or 12 pounds a day or if a rapid picker maybe 20 pound. The price is ten or twelve cents a pound in S.F. Several hundred pounds are sent to S.F. each season. Some bushes bear abundantly & fine berries and it is not uncommon to see the track of deer thickly printed about such bushes.

Redwood. Lightning will shear off a band or strip down the trunk following the grain of the wood. Does not kill the trees but in case of Sugar Pine does kill.
Hendricks, Coast, a cluster of trees on south side Gualala River in Sonoma Co., 2 miles from coast. over
cf. 24:103

cont. –
Sugar Pine has been made into staves from trees only one mile from the ocean at Gualala in past times says Brandt senior in recounting history. Sugar Pine does not occur north of Alder Creek. Sugar Pine trees coarse & rough-grained in this region, for the most part. Hemlock, Coast not found anywhere south to or about Cazadero so far as inquiry can determine.

Falling limbs of oaks – Brandt's brother says that in Big Valley, Lake Co. the harvesters will not sleep beneath these trees lest they fall in the night. The water table is only a short distance down so their roots should have a constant water supply. Still in hot dry still days the leaf weight might increase in such a way that the branch could not offset transpiration and the limb would snap. Brandt refers to the brashness of this wood, a tree when falled breaking up its top into stovewood lengths as I have also observed. Brandt's suggests snapping of limbs may be due to unequal expansion & contraction on upper and lower

side. Garry oak has no bad reputation in this matter in Brandt's district. –

– Collectors, Early California. cf. Univ. Cal. Pub. Bot. 4: 318.

– Mistletoe (Phoradendron). Helen Lukens Jones, Out West, Feb. 1904.

– Monterey Cypress.

"On the 17 Mile drive out of Monterey and Pacific Grove there is an Egyptian Cypress Grove which is thought to be the only one outside of Egypt. Will you kindly let me know if that is the fact. Thanking you in advance, I am, Yours Truly, R. K. Berry, Placerville California, Sept. 25, 1913"

– Batis maritima. none in U.C.* hb.

– Eriogonum delicatulum. "

* out of place found

– Heller, A.A. Is here. Has an olive ranch of 20 A. below. Chico & Oroville. Kennedy was here in summer and said that he was forced to let Heller out, that Heller instead of doing the work for which he had employed him, worked on his Catalog, on Muhlenbergia, on various things. Kennedy, says Hall, wanted Heller to talk to farmers, do experiment station work and so on. Heller says the Board of Regents let him out and that when he returned to Reno he found that both Kennedy and the President were very much suprised to know that it had occurred but that the Regents having done it, it could not be helped. Heller has sold his

herbarium to the Brooklyn Botanic Garden. He means to continue Muhlenbergia apparently and to sell sets of plants. He is looking for another position — All this from Hall, H.M. —

Heller came to lunch with me today, Oct. 18. He says his herb. sold to Brooklyn Bot. Gard containing 10,000 sheets. The olive ranch has 5 A. planted to olives. He has a lot of duplt. material left and where there were 2 sheets of a number he kept one. Heller is very mild and soft-spoken. One would never suspect from his conversation that he holds such strong ideas or views as control his actions, publications, etc.

— W.H. Lamb, U.S. For. Service, returned from a coll. trip to Humboldt while he went some weeks ago in quest of Ceanothus. He did not get much at this season. He had Pickeringia in the lot and thought from its spininess that it must be a Ceanothus. It must be very pleasant to travel around at Government expense and have all one's time for a grasp. Lamb is a pleasant young fellow and I like his ways and his work. He separates Abies shastensis specifically from Abies magnifica but fails to distinguish them without cones, the bract shapes of which he regards as constant. I think he may be right

as to the bracts. On the other hand he says he cannot separate Abies concolor and grandis by the bracts & scales without other material! In this he states my own experience. The deep groove on top of the leaf in A. nobilis he regards as constant and shows my Trinity specimens into A. magnifica.

— Eriogonum, Sect. Gamyanya. The latter is a rare Greek word meaning brightness, sheen. Apparently first used by Watson, Proc. am. Acad. 12:259

— Menzies, A. The only plant which he named, that I recall at this moment, was Abronia arenaria Menzies; Hook. Exot. Fl. 3, pl. 193 (1827). Menzies had been in

possession of this plant since 1791 and had collected it long before any one else, but he waited so long that he was antedated one year by Abronia latifolia Eschscholtz. Cf. Bull. Torr. Club, 29:681 (1902).

– Quercus wislizenii. Sometimes young trees are cut for Christmas trees at Oakdale. The second bench from the river, the sandy land covered by the live oak, is ideal for almonds and it is being rapidly cleared for such.
– Miss Alma Innes, Bot. '04

– Coleman, G. A., Curator in entomology, U.C. says:– Phyxgnidia has three broods in a year, the spring brood, the summer-fall brood, and the winter brood. This insect has flourished so well in the dry years of last 3 years that its attacks on the oaks at Monterey have become serious and some are dying. Spraying by the four towns there has been recommended. At Santa Barbara the oak-girdler is working serious injury to the trees but does not attack except in dying affected by the oak blight apparently. It follows up the disease. There are fungus enemies, three in particular, that are

services: Cronartium, Peridermium and Æcidium.

The Oak Tent Caterpillar has only one brood in a year. The Physgnidia is scarcely found in the interior on Quercus wislizenii, but mainly on Quercus agrifolia.

– Cleveland, D. See picture in 1912 file.

– Coulter, Thos. cf. Bot. Gaz. 20: 519.

– J.M. Hutchings & Co, 1718 Pine st. S.F. Pac. Coast Seed Cat: for 1878 & 1879. A small pamphlet. See Nursery Cats in Bancroft Lib.

– Rancho Chico Nursery Cat: for 1884. 108 pp. John Bidwell, Founded 1851. First cat. in which I find mention of Schinus molle. [See preced. note.]

– We were discussing the fall of oak limbs at Mrs. Chas. Blake's house last night. Susan Blake said that a limb 2 ft. through and sound had fallen from a white oak on his Howell Mt. place. Anita Blake said the newspapers reported the killing of a boy by a falling oak limb in the Santa Cruz Mts. about the same time. She, therefore, at once had her open-air bed moved from under an oak at the Howell Mt. place. Susan Blake called attention to a well-known fact, the exceptionally large size of the limbs and branches of Quercus lobata. They are trunk-like in size. The limbs of Quercus garryana are of similar size. In the case of the Blue Oaks of the Sierra Nevada foothills we have a thing

tendency to cross-fracturing. A dead limb picked up and struck on the ground breaks into short fragments. Ned Blake spoke of Redwood tops falling in quiet weather in the same way. Redwood tops, wind-killed, doubtless fracture cross-wise spontaneously, that is by season-checking, just as is the case with dead limbs of the Abies concolor, which can be struck on the ground, the limb breaking simultaneously into small billets,—just right for a camp-fire. Now our oaks have a tendency to cross-fracture and this fact may help explain the falling of

oak limbs in quiet weather. I have never heard of accidents to human beings from falling oak limbs in the Sierra Nevada.

– Xerophyllum tenax. Called Basket-grass lily by Anita Blake.

– California collectors. Compare Hemsley's acct of botanical exploration in Central America. (Biol. Cent-Am. Bot.)

– Vaccinium ovatum Pk. Becomes a small tree in the Redwood Belt of Mendocino Co. W. C. Matthews, Bot. 104, brings me from Ft. Bragg sections from the trunk of a tree. A section about 4 ft. from the ground is 5 x 7 inches, shortest and longest diameters respectively.

–over–

where the trunk forks into 3 prongs, is 12 in. in largest diameter and 2½ or 3 in. in shortest diameters. The bark is reddish brown, superficially checked into oblong scales ½ to 1 inch irregularly long which gradually exfoliate. —
Dec. 2, 1913.

"I own 381 acres of rich land at Ben Lomond but am confronted with 100 or more acres of very thick, strong and vigorous white Thorn trees or bushes. Has any means been discovered to destroy this other than to grub it up?"

Cont. from p. 170

— Jos. W. Cole, Felton, Cal. Jan. 12, 1914. = Ceanothus in cairns. Stump sprouts & sprouts from root-collar acc. W.C. Matthews, Bot. 104.

— Garrya elliptica. Trunk 16 in. diam. back of Ft. Bragg. — W.C. Matthews, Bot. 104, — Jan. 1914.

— Ceanothus thyrsiflorus. Killed by fire. One of the first things to come in on Redwood cut-over lands and the most abundant. Associated with it are Vaccinium ovatum, +Myrica californica. Under this nurse this Redwood forest gradually comes back. In a mature Redwood forest there is no Ceanothus

thyrsiflorus." – W. Matthews, Ft. Bragg, Jan. 1914, of Bot. 104. It is my remembrance that Ceanothus thyrsiflorus does occur in the Redwood forest and probably I have notes in previous vols. bearing in said matter.

– S.B. Lillis says of the Rancho Cantua, west side of the San Joaquin near New Idria: –

"Ephedra nevadensis grows in streambed of the Cantua, making thickets in which the wildcats have their lairs only 300 or 400 yards from the ranch house. The cows are the most cunning

animals we have. They come in and get our chickens. In fact we maintain the chickens for their use, as we do not get any ourselves. They can climb a tree to a roosting hen and can go anywhere that a hen can go. A wild cat took a hen that was too heavy to pick up and dragged it along the ground and dropped it in a narrow ravine as pursuit became too close. I set a trap on each side the hen and carefully covered them. The cat came back the next night and took the hen without disturbing the traps. A leg was left and

the traps were in readiness again, but no trap was sprung when the leg was taken. The animals have their regular trails or runways and keep to them until they find trouble as that. A trapper now on the ranch trapped eleven coyotes on a trail before they scented danger and left that runway. The coons use their forelegs as arms, almost like a human being. Wild oats (Avena) have only recently appeared in the Rancho Cañada County and in small patches only. Poverty grass has come in the last four years. appeared

four or five years ago and over-ran the country the next year or two after. Fossils of whales have been found on the mountains back of the ranch by us. A root was shown me by this hills; it grows in the creek bottom at Rancho Cantua. It is chewed when you are thirsty. I did not seem to be able to identify altho' it was in a case which could not be opened at the moment and I did not have it in my hands. She called it in Spanish something like "Yerba Dagra;" but that may be a wild guess. — Sunday, 25 January 1914.

- Vaccinium parvifolium. "Tree" 25 ft. h. Section of trunk at 4 ft. above ground = 2 inches diameter! Measured by W.C. Matthews, Bot. 104, who calls it a "shrub". Spm. in U.C. Bot. Mus. — Jan. 1914 Mr. Matthews says average height of this sp. in cañon back of Devlbiss Ranch is 20 ft.! The 25 ft. h. thing is a measured record. It was 25 and a fraction.

- Arctostaphylos tomentosa. "Does not stump-sprout on Mendocino coast after a fire. Seedlings in quantity" — W.C. Matthews = A. columbiana!

- Ranunculus californicus. Teratological. The green petaloid form grows at Ingleside (sent by R. Kuhn), at Redwood city, see my spms. coll. Mar, 1914, and near Walnut Creek. The Kuhn material is in U.C.

- Congdon, J.W. was certainly a keen-eyed collector. He found Stellaria umbellata at Tuolumne Mdws. and Lomacra coerulea at Crescent Lake, both great rarities in Calif.

- Brandegee, T.S. Born 1843. See Biog. Record Classes 1868-1872, Sheffield Scientific School. Yale, 1910. This notice says married to "Miss Katharine Layne", which of course is not true since she had already married Curran.

Berkeley to Yosemite

– The International Phyto-Geographic Excursion in America, a party of 18, comes "to do" California. See p. 190–201. [This account was written in the summer of 1914 from memory. The account in the next book (#28) was written on the journey.]

– Sequoia gigantea. Big Tree Grove at Calaveras, 1869. $50 and 5 days for round trip in cheapest and most expeditious manner. "I've men spent 22 days in 1854 cutting down a tree which was 92 feet in circumference and 300 feet high

Cont.–
Number of visitors annually is about 2000. – From "Resources of States and Territories west of Rocky Mts.", p. 52. J. Ross Browne.
– Townshend. Narrative of a Journey across the Rocky Mts. to the Columbia River, etc.
– Alphonse Wood. His own exuberant acct of his botanical journeyings in Cal. in 1866 is to be found on p. 165, Proc. Acad. Philo. 20. (1868). vol.
– Bloomer, H.G. An ardent cultivator of the native lilies. – cf. Elvers, Monog. Lilium.
– Calochortus excavatus greene. The label on cotype in HBLC. says "Bishop Creek, Nev."; should be Bishop Creek, Inyo Co. Cal.

-Calycharitis palmeri Wats.
Cotype no. 527 in Hb. U.S.
Bud very acuminate.
"Mohave River district, May, 1876, Edw. Palmer". Gland without membrane. Not much left of gland, probably eaten.

- Calycharitis invenusta Greene
The label, written by Lidestrom and ∴ at Greene's direction: = "Calycharitis palmeri Wats. Tehachapi, 24 June 1889. E.L. Greene". Lilac color very strong.

- Torrey, John, and Horace Mann present at meeting of the Cal. Acad. Sci. July 3, 1865. Proc. Cal. Acad. 3:201.
- S.B. Parish. He is remarkable for his kindly good sense; simplicity directness and candor; love of the humanities.

- Teratology. Tellima affinis, sent by Benj. Cobb, Paso Robles. Apr. 1, 1907.
One flower with broad truncate-based calyx; about 20 stamens; 2 = gynoecia, each with 4 styles!
7 petals, - or that many present on examination; some may have fallen.

- Quercus Gambellii of Bolander was Quercus Douglasii as to central California anyway. Cf. Powers, Aborig. Bot., the acorn most favored for food by the Indians was "Quercus Gambellii". Bolander gave our this name a good deal.

- A.D.E. Elmer. Was collecting in Whitman Co., Wash, in 1896. See his label on Lepidium Menziesii DC.

– Early day Gardens in California
The early Californians cult. what they could, and in lieu of other things used the native plants. They cultivated at an early date Brodiaea volubilis, cf. Powers, Aborig. Bot.

Also Baccharis pilularis, Plumea ilicifolia, etc. There is a paper by Dickson in Pac. Rural Press, winter 1916-1917 which bears on this matter of early day gardening. Coins radiata was early cult.
– Apr. 1917.

– Teratology. Pterospora andromeda. See a spec. coll. by Rowena Bearss at Tahoe. Stem fasciated somewhat and the raceme forked!!

– Erythraea. I take as typical of E. muhlenbergii my Willow Creek-Hupa 2022 and Tracy 3798 S. Fork Eel. These are conspecific with Heller's Table Mt., Oroville, no. 10777 and my Table Mt., Tuolumne Co. no. 6426. Heller's no. is from near the type loc. of E. floribundum Bartl. and is doubtless floribundum. If that isn't floribundum then there's no floribundum. So I see it now muhlenbergii runs as far s. as the Santa Cruz mts. & Tuolumne Co.

Coming in at West Berkeley (also at Ft. Bragg, Walters, May and in the Santa Cruz mts. (see also Pajaro Hills, Chandler no. 373) and south to San Luis is something quite different. It has larger flowers and

all or essentially all are pediceled. This thing seems to grade into true E. exaltatum in S. Calif. It may be possible to distinguish these two forms but I doubt it. Still, the Bay region thing is in appearance different and my plants of it from the Santa Cruz Mts. are quite branched and not strict as in the typical Col. desert form from Owens Lake. This Bay region plant may possibly be the true E. muhlenbergii. — W.L.J. June 11, 1917.

Chandler 373, Pajaro Hills, is quite the same as Heller's 6489 Pacific Grove distributed as E. vaseyi which these spms. certainly are not! All these Bay region things have

obtusish broadly oblong leaves - rather alike in respect to foliage, inflorescence & flowers. — I now decide that all the South Coast Range plants are one thing and not specifically separable from the S. Cal. E. exaltata. It is still possible that this Bay region & S. Coast Range thing is true Muhlenbergii but it could not be separated specifically from the S. Cal. plant. Indeed some of Chandler's plants may be compared with Parish Furnace Creek and the flowers will be found the same size and alike otherwise. This Coast Range thing seems to have a more fan-shaped stigma. Prob. this is not important. The small West Berkeley plants etc may represent merely an early stage — June 12, 1917.

— Prunus in the Berkeley and Oakland Hills. Under my direction H.H. Haworth Bot. 104 has listed locs. for two species:

P. emarginata: cool cañons of the Berkeley Hills, 500 ft. elev. where there is plenty of moisture; stream bank Strawberry Cañon, well developed; Shepherds Cañon south wall; Glory Hole Cañon; Redwood Peak.

[In Telegraph Canon occurs in thickets on shoulders low down south side, half way up.]

P. demissa: north end of Palo Colorado ridge, almost on top and over-looking the Snake Road where it starts down into San Leandro Cañon above the O.A. & E. tunnel. It is a southeast slope and rather dry. The thicket begins about

the top of the ridge and extends some distance down the slope. The larger individuals are in the damper places lower on the slope.

— Dirca occidentalis. Average height: 6 ft., max. of 10 ft. in Glory Hole Cañon (3½ in. diam. trunk at base). Restricted and localized distribution: n. slopes cool well-watered cañons. Occurs in dense thickets of its own, or an individual here and there in other thickets, but always on n. slope of a cañon. As a rule direct light not inimical.

Strawberry Cañon, scattered individuals
Shepherds Cañon, " "
Ridges about O.A. & E. tunnel.
Redwood Peak, 1 thicket on N.E. side.
Glory Hole, individuals and small thickets.

— H. H. Haworth.

– Lepidium. I have just examined a series of spms. from all parts of Cal. of L. medium Greene. There have all passed as this, that is L. intermedium Gray, by the most diverse minded Cal. botanists. They are all alike in habit, foliage, fruit, – but the cotyledons may be either incumbent or accumbent! Heller has distrib. a Truckee plant (his no. 7090) as L. virginicum. It is clearly our L. medium and evidently our plants should be called L. virgin. Moreover Thellung makes our a subsp. texanum of virginicum.

My Barstow plant, no. 6623, passes as L. apetalum of Am. auth. So. Hall's Yosemite (9133). But mine has accumbent cots. and has incumbent cots! which shows again the value of the cot. position as a test in

this species!

Lepidium apetalum, coll. by W.W. Jones, Bozeman, Mont. is in all respects a beautiful match for my Scott Valley, Lake Co., 1892. If the petals may be "minute or none" L. divergens (cf. Rydberg. fl. Col. 152 "in" or "generally present" in L. virginicum (Britton, Ill. Fl. 2: 165), then they may well be present or absent in L. medium.*

The ill. of L. densiflorum (apetalum) in Britton, l.c. shows a dif. plant probably from the L. apetalum of Cal. authors.

* I cannot distinguish, specifically, L. medium and L. virginicum any more than Thellung, but I go further than he does and reduce medium outright.

Cf. Types Book, p.

Berkeley to Yosemite

The International Phyto-Geographical Excursion* arrived at the Oakland Mole on Sunday morning, Sept. 7. It had been arranged that the party was to go to Mt. Tamalpais for the day but the taking off of the night service to Yosemite necessitated an eleventh hour change of plans and then out of joint. The printed program which I had prepared as Chairman of the California Committee of Arrangements for the excursion. The party consists of:

Dr. Adolf Engler, Berlin
Professor C. von Tubeuf, Munich
Professor Carl Schröter, Zurich
Dr. Edward Rubel, Zurich

See vol. 28, p. 1.

Dr. & Frau. Brockmann-Jerosch. Zurich.
Dr. Ove Paulsen, Copenhagen.
Dr. Geo. E. Nichols, New Haven.
Dr. T. J. Stomps, Amsterdam.
Mr. & Mrs. A. G. Tansley, Cambridge, Eng.
Dr. Alfred Dachnowski, Columbus.
Mr. Geo. D. Fuller, Chicago.
Prof. & Mrs. F. E. Clements, Minneapolis.
Prof. H. C. Cowles, Chicago.

The party was in charge of Cowles. Dr. Skottsberg general of Upsala joined party here.

Arrived at El Portal and spent the night, going as early to Yosemite where we arrived about 10:30. Spent some time in the floor of the valley in the immediate neighborhood of the Sentinel Hotel and went on to Mariposa Big Trees at 1.00 p.m. The party enjoyed the ride thro'

the high forest, stopped the stages as we pleased to botanize, having two vehicles at our command and arrived at Wawona at 7.15 about. Spent the night and the next (Tues.) morning went by stage to the Mariposa Grove. Had about four hours in the grove, mostly about the Big Tree Cabin. The great trees delighted the party and they returned to the hotel in great contentment. The next morning, Wednesday, September 10, we drove to Glacier Point. Some of the party left here, going back to S.F., the Brockmans and Poulsen, whilst Tuboef went back to El Portal to study the foothill conifers.

The ascent of the stages to the level of the Red Fir, Abies magnifica, aroused once more the somewhat jaded spirits of the party and the new flora which came in with the Red Fir now held their attention and interest. We lunched on the road at a pretty place, in the neighborhood of Peregoy Mdw., or at least not so far from it.

The party collected, took photographs and studied the composition of the meadow. The most zealous collector is Schroter; Engler also collects a great deal. Cowles does not collect at all, Clements collects scraps and

asks Hall or myself to identify them, after which his scraps are thrown away. I find Cowles very genial and walked from Big Trees, the Mariposa Grove, down to the hotel, yesterday.

Before reaching Glacier Pt. we left the stages and ascended to the summit of Sentinel Dome, the characteristic rock xerophytes on its summit aroused the greatest interest. The next morning, Thursday, Sept. 11, we left the hotel at Glacier Point and started by trail for Nevadva Falls by Illiloutte Trail. Engler walked the whole distance altho by the time he reached Nevada Falls he was rather tired and by the time he got to the foot of the trail below Vernal Falls he was glad to get into the light spring wagon which was waiting for him and one or two others.

We lunched at Camp Curry, took stage for El Portal and were forced to spend the night there, thus losing another daylight day about the Bay region. The next day was a long tedious hot dusty day on the train and we arrived at Berkeley and went to Hotel Shattuck arriving at 4.30. This was scarcely time for the dinner & meeting of the California Botanical Society at Hotel Oakland but we managed to get together by 7^00, and filed into the private dining room.

The dinner was excellent, the speeches were satisfactory and the guests seemed thoroughly to enjoy themselves. Only one incident marred the occasion. As I was rising to call on Dr. Barrows to speak for the University of California. Mrs. Lemmon, who had not been invited to the dinner but came anyway, rose, interrupted the toastmaster (I was presiding) and asked to speak. Without waiting for permission she ran on a moment or so and then asked to be introduced. I simply spoke her name and inclined my head and lest I should say more or lead her off she ran on volubly about herself and Mr. Lemmon, giving

their whole history, it seemed. But it seemed longer than it was and she finally gave up the floor and sat down. The Lemmons have always featured themselves botanically on all occasions and Mrs. L. felt that she must represent Mr. Lemmon, speak for him and say a word for a great name which had never received recognition. After this I called on Barrows and then followed Cowles, Tuboof and Engler in succession. After Engler the dinner party rose and drank Engler's health. Then we repaired to one of the large rooms of the Hotel Oakland and joined the audience which had been

patiently waiting for the dinner bell and in order to hear Schroter's illustrated lecture on the flora of the Alps.

Schroter's illustrations were very beautiful and his English was excellent for a man who had given only a few months to the language.

The next morning, Saturday I took Schröter and Stamps to Santa Rosa to see Luther Burbank with whom I had arranged a meeting. When we arrived Burbank came into the parlor of his residence and I presented him to my fellow-travelers. He asked if we would like to

sit down and talk there or to go into the garden(!). I said my friends hoped to see his plants, the particular things of which they had heard so much. He agreed and I remarked that perhaps we ought to arrange in advance the length of our call so that we would not trespass on his time. He said instantly that he gave five minutes to parties. I agreed and we went into his garden. He began by pointing out a considerable number of exotics from various places which he had there. My friends naturally grew impatient and asked for the Burbank creations, mentioning this and that. We were shown a few

things but hardly enough to pay for the visit, it seemed to me. Apparently certain things have quite passed out of the ken of them only at the Sebastopol place. The cacti were there in abundance and we enjoyed them. The most interesting thing shown was a quite prickless blackberry which Burbank put his face down into and rubbed to demonstrate its innocuous character. This was done in a dramatic way, very effectively, and must "take". with the large crowds who come here. As we passed about the garden one or two passersby stopped in the street to look in and

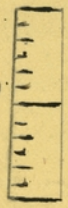
catch, if possible, a few crumbs of information. They looked sleepy and inoffensive, but Burbank turned to me and said: "See there, I can't come out here but people began to gather. There was a regular riot one day and I had to send for the police"! — What an effect this story would have on an excursion of Shriners or Knights of Columbus visiting his grounds! *

The "Phyto-Jogs" the next day, Sunday, Sept. 14, went to Mt. Tamalpais under the guidance of Miss Eastwood and the next day to Monterey where they passed from my charge into that of McDougal for the journey from Carmel to Arizona.

* These things, it must be understood, are mere foibles of the man. His real value rests permanently on other things; his foibles will be forgotten.

Addresses

483 – W. J. Connor, Santa Fe Agt at Barnwell

– W. F. Parish, Moss Beach, San Diego County.

– Miss Bragg, Barstow, Waterman Ranch.